



2023-24
School Improvement Plan

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Discover.Lead.Persevere
Respect+Courtesy=Pride

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2022-2023 Goal Updates



Photo by Allison Rial
Class of 2022

Discover.

Ignite Passion and Discovery in Every Student.

Discover through critical thinking and embracing diversity by preparing students to transfer their skills to new tasks.

Photo by Allison Rial
Class of 2022



Lead

Ignite Passion and Discovery in Every Student.

Lead with collaboration and communication by empowering student leadership in the classroom, building, and in the global community.

Photo by Natalia Camacho



Persevere.

Ignite Passion and Discovery in Every Student.

Persevere with emotional intelligence and empathetic courage by providing students the right tools to be successful when faced with challenges.

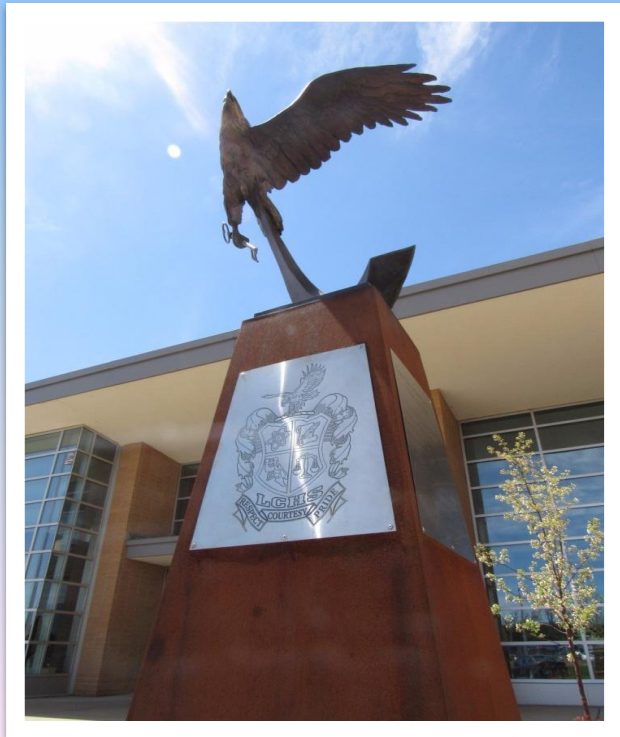


Photo by Natalia Camacho, Class of 2019

2022-23 Career and Technology Education Goal Update

By the end of the 2022-2023 school year, we will have mapped Introduction to Foods, Advanced Woods, and Intro to Business which will include learning targets, essential questions, and common assessments.

- Accomplished: Mapped Introduction to Foods, Advanced Woods, and Intro to Business which will include learning targets, essential questions, and common assessments.**

2022-23 English Goal Update

By the end of the 2023-24 school year, English 1, 2, and 3 will take proficiency tests on grade-appropriate grammar, punctuation, and writing conventions followed by deficit instruction; growth will be tracked and discussed in grade level meetings and in student conferences. Survey 9th graders on media literacy and use the new English 1 unit to assess media literacy skills

- **Accomplished: All students in the core class have undergone instruction and assessment in SAT skills, encompassing grade-appropriate grammar, punctuation, and writing conventions, through diagnostics and reassessment.**

2022-23 English Goal Update (Contd)

- **All sections of 9th-grade core English classes successfully completed the newly mandated media literacy unit, which entailed writing an informative paper and delivering a persuasive speech based on research they conducted.**

2022-23 Fine Arts Goal Update

By the end of the 2022-23 school year, each genre pair will have conducted 3 anchor grading exercise using our new and improved rubrics.

Comparisons will help teachers unify our language and be sure students are held to similar standards across the district.

➤ **Accomplished:**

Review rubrics and essential questions

- ***Student friendly language***
- ***Do rubrics describe what it is, instead of what it isn't?***
- ***9 music classes, Intro to 2D & 3D Art***

2022-23 Fine Arts Goal Update

In the 2022-23 school year, each course will include a purposeful, reoccurring, and relevant SEL activity. Content time will be used to create shared folders with successful and state standard aligned SEL. Panorama data and playbook, as well as materials from the instructional coaches, will be used to guide our work.

➤ **Accomplished:**

SEL infused into lessons

- ***Purposeful and aligned with IL State goals for SEL***
- ***Shared Folder with lessons and ideas***
- ***Reviewed during late-in meetings***

2022-23 Mathematics Goal Update

During the 2022-2023 school year, Math 1, Math 1 Honors, Math 2, Math 2 Honors, Math 3, and Math 3 Honors classes will incorporate practice multiple choice and free response questions 4 times each semester that reflect those of standardized test questions.

- ***Accomplished: All classes created activities to practice SAT and standardized testing questions. The questions were practiced in multiple formats and given out throughout each semester. Some teachers incorporated technology and/or gave the students questions that related to their current learning targets. All activities were stored in content team folders and in Google drive.***

2022-23 PE/Health/Driver Education Goal Update

In the 2022-23 school year, fitness testing data will be compared to examine student growth. A minimum of 3 times per week, teachers will practice push-ups, sit-ups, sit and reach, and a form of cardiovascular endurance during warm-ups.

- ***Accomplished: The fitness tests were given throughout the semester, but the overall results were varied depending on course. The testing was completed a few times a week as recommended by our department goal.***

2022-23 Science Goal Update

Each science course offered in D117 will contain at least 2 laboratory-based Claim-Evidence-Reasoning activities per semester. Each course will have retakes written and available for all summative assessments.

- ***Accomplished: All Science courses contained at least 2 CERs per semester. 1 per semester was done in tandem with Antioch HS as common formative assessments. We are continuing to use these in the current year.***
- ***All Physics and Chemistry courses have retakes available for all summative assessments. Biology worked on writing summative assessments this summer.***

2022-23 Social Studies Goal Update

Controversial Conversations

1st Semester: Everyone will choose to either implement a CC strategy (philosophical chairs, socratic seminar, structured academic controversy) OR observe a colleague implementing a CC strategy in at least one of the courses you teach. Everyone will report to the department at a department meeting throughout the semester with a brief reflection.

2nd Semester: Everyone will complete the option that they did not choose for the 1st Semester (implement or observe) and report out again.

By the end of the 2022-23 school year, all core content team curriculum maps will have key skills included and aligned to appropriate content learning targets. Instructional strategies and assessments will be in the process of being developed to teach and assess key skills.

- ***Accomplished: Teachers embraced the use of CC strategies and learned from their colleagues.***
- ***All core curriculum maps are published along with some of our electives.***

2022-23 World Language Goal Update

By the end of the 2022-2023 school year, the World Languages department will incorporate 90% target language in our classrooms.

- ***Accomplished: Teachers have gradually increased their language use in their classes to meet the needs of their students and get to the 90% mark.***

2022-23 Student Service Goal Update

By the end of the 2022-2023 school year, the Student Services department will review the effectiveness of streamlining the new teaming approach and meeting schedules that were created in order to both support the trauma and losses which occurred as a result of COVID and reduce the amount of time teachers were pulled away from instruction and daily responsibilities.

- ***Accomplished: Teachers and service providers have reported that having the teaming approach and meeting schedule has been more effective and led to less time away from their classrooms.***

2022-23 Information and Learning Center Goal Update

Collaborate with our ILC counterpart to create, update, and promote our research tools to align with the current model of teaching.

➤ ***Accomplished:***

As part of that goal, we created and updated a District Action Plan and developed an Online Teaching and Learning LibGuide. We also pushed into department meetings to show our resources and help create and update their LibGuides.

Evidence Supporting **2022-23** Goals

The Class of 2023 had two National Merit Commended students. Two students were awarded National African American Recognition and two students were awarded National Hispanic Recognition and one student was awarded National Indigenous Recognition. In 2023, Lakes had 45 AP Scholars, 22 AP Scholars with Honor, 29 AP Scholars with Distinction, three AP Capstone Diplomas and five AP Research & Seminar Certificates.



Seven fall athletic teams, seven winter athletic teams, and eight spring athletic teams earned the IHSA Team Academic Achievement Award. Lakes had **ten All State Athletes and two state qualifying teams!**



2022-23 Graduates from Lakes Community High School completed 1150 applications to 295 colleges/universities. They are attending 84 different institutions in 24 different states.

- Starting a 2 or 4 year degree 80%**
- Enlisting in the military 1.5%**
- Entering the workforce 18.5%**

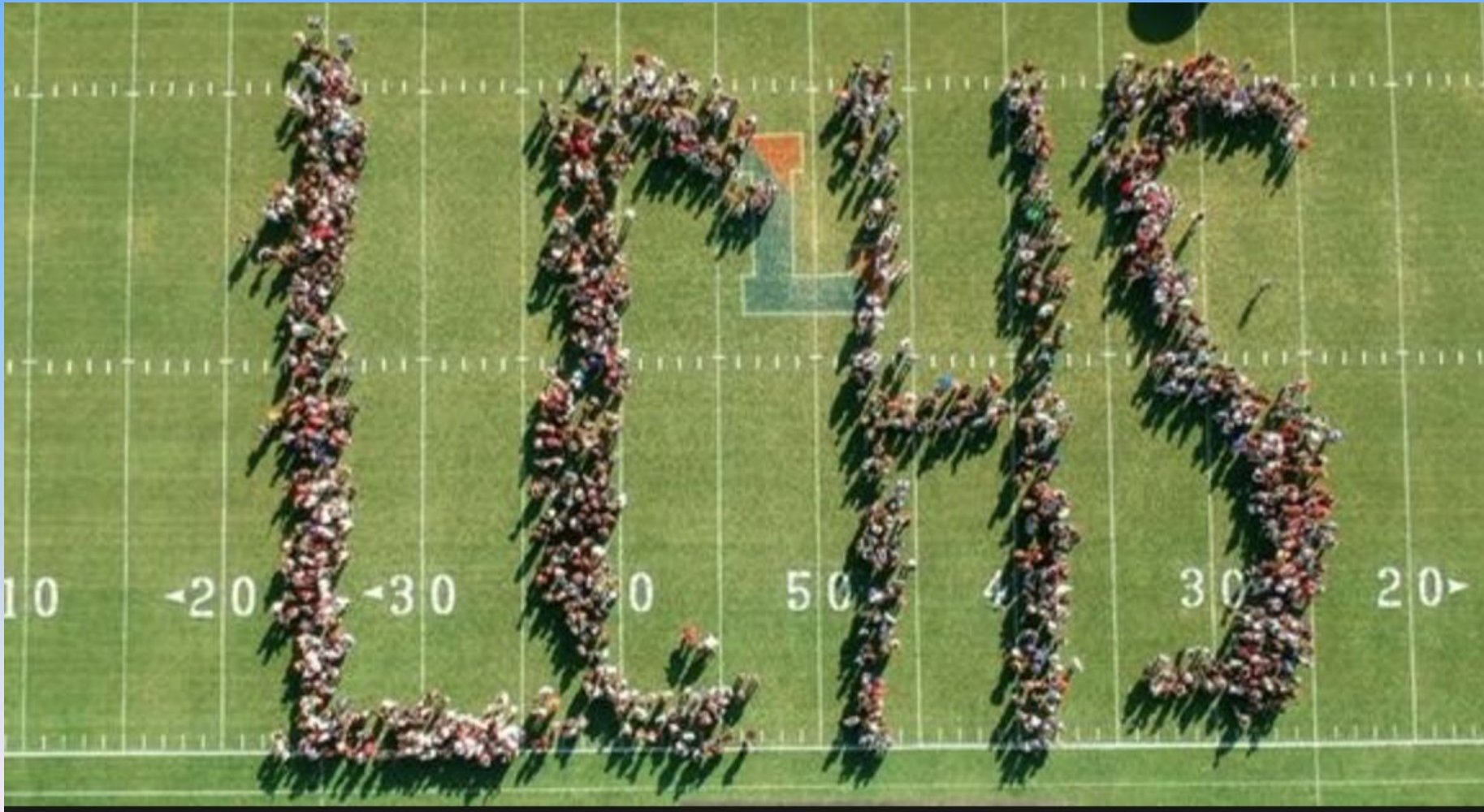
Legacy of Success

- ❖ **Exemplary School in 2017-18, 2018-19, 2019-20, 2021-22, & 2022-2023 School Report Card, top 10 ten percent of schools in Illinois with no underperforming subgroups**
- ❖ **66th 2023 Best High School in Illinois by US News & World Report**
- ❖ **74th 2022 Best High School in Illinois by US News & World Report**
- ❖ **79th 2021 Best High School in Illinois by US News & World Report**
- ❖ **73rd 2019 Best High School in Illinois by US News & World Report**
- ❖ **67th 2015 Best High School in Illinois by US News & World Report**

- ❖ **Renewed Illinois Democracy School Commitment 2022**
- ❖ **Illinois Democracy School – 2012**

- ❖ **College Board has named Lakes Community High School to the 2023 AP School Honor Roll for earning Silver Recognition.**

Our Unwavering Beliefs



Deliberate and Consistent Actions

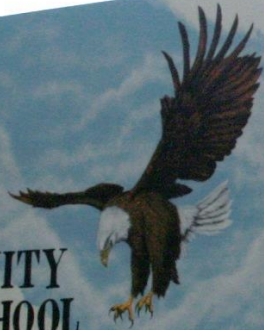
The following deliberate and consistent actions are the foundation of all we do at Lakes and how we make decisions to better our community.

- ❖ **Respect & Courtesy = Pride** is our motto, and we live by it.
- ❖ **The Eagle Way** is how we maintain our relationships.
- ❖ **Discover, Lead, Persevere** is how we foster, prepare, and empower all stakeholders to **ignite passion and discovery**.
- ❖ The **Rtl flow chart** is our roadmap for helping those who are struggling.
- ❖ We take pride in our **student-centered culture**. Every student can be developed through dedication and hard work.

Welcome to

Lakes

COMMUNITY
HIGH SCHOOL

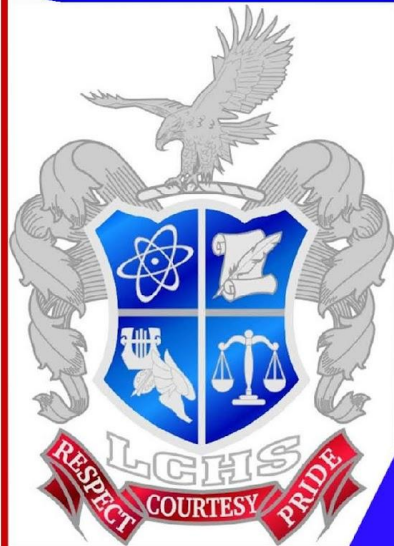


Where

Respect + Courtesy = Pride



The Eagle Way



Soar right up to the top

Respect is the key

No one will interfere with the learning process

Students will listen to and cooperate with all staff members

Dress will be non distracting and appropriate for the learning environment





Lakes Community High School's Multi-Tiered System of Supports

Tier 1: All Educators

Definition: This is core instruction provided to all students. Teachers differentiate instruction by proactively planning and implementing a variety of instructional methods matched to varying student skill needs within the classroom

Universal Services: Common Assessments, Course Offerings, Project CRISS, CPS, Math Learning Center, Writing Center, ILC, Tutoring Outside of Class

People Involved: All educators and all students

Tier 2: Targeted Team

Definition: This is a supplemental intervention that is provided in addition to the core curriculum and is delivered to small groups of people with increased intensity.

Targeted Interventions: Math Improvement, Reading Improvement, Strategic Learning, Tutoring, Summer Freshmen Academy, Support Groups

People Involved: Select Educators, Guidance Counselors, School Psychologists, Social Workers, Specialists, and students meeting criteria

Tier 3: Core Problem Solving Team

Definition: Instruction and intervention in this tier is targeted toward a smaller group of students who demonstrate need beyond what can be provided in Tiers 1 and 2. Such interventions are provided at a higher level of intensity, typically in a one-on-one setting

Intensive Intervention: Academic Tutoring, Supported Study Hall, Social Work Support, Outside Counseling Services, Behavior Support Plan

People Involved: Select Educators, Guidance Counselors, School Psychologists, Social Workers, Specialists, and students meeting criteria

ALICE Certified Organization



This is to certify that

Community High School District 117

has successfully met the requirements of the Navigate360 Certified Organization program, in active response preparedness, and is hereby eligible to bear the ALICE Certified Organization mark shown here.

Certificate Issued: 4/8/2022 Certificate Expires: 4/8/2023



Authorized By: 
J.P. Guilbault, CEO



Evolving Focus

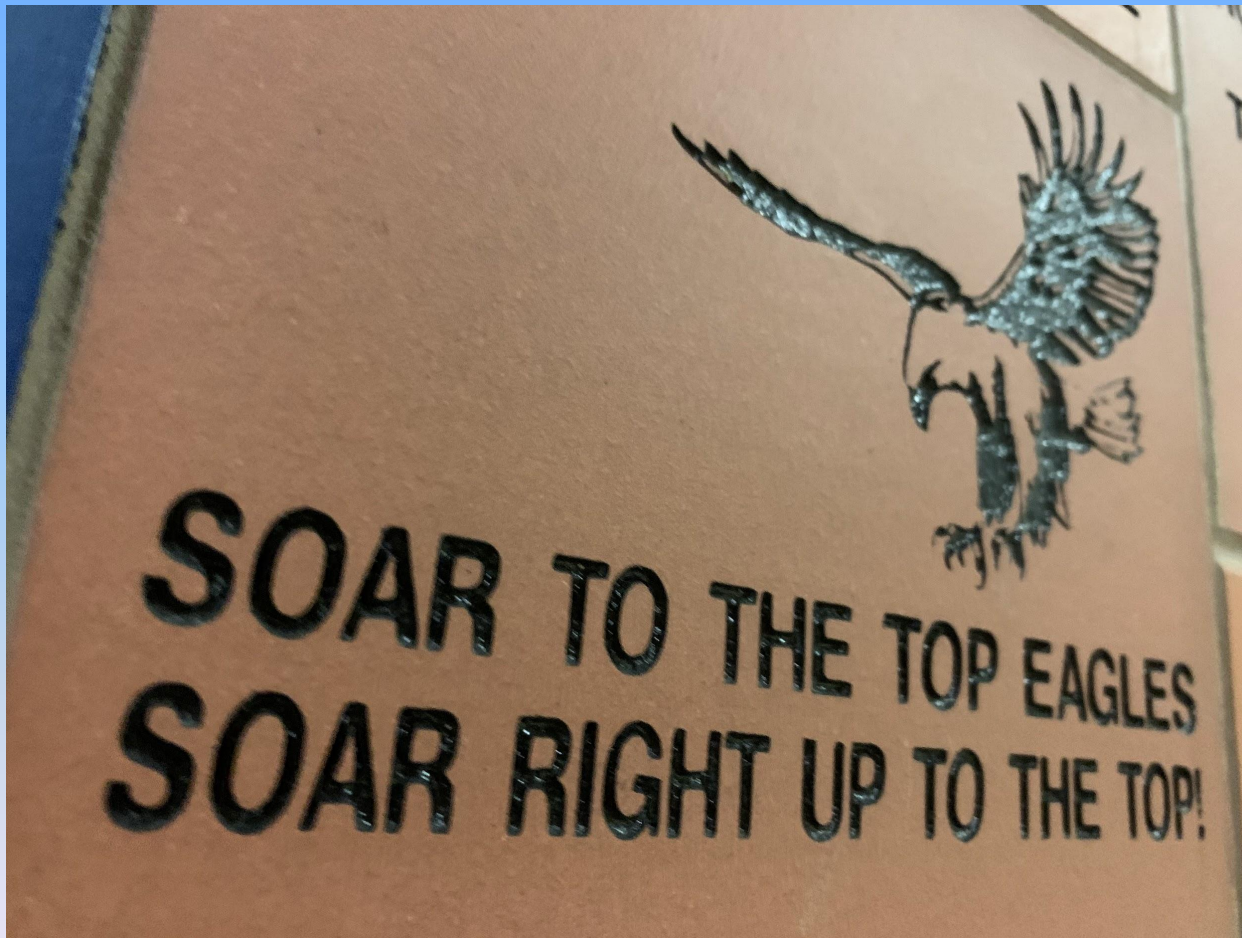


Photo by Allison Rial
Class of 2022

Gleaned from our 2022-23 School Improvement Plan

Live

- ❖ The spring 2023 Panorama student survey showed 43% of our students feeling like they are valued members of Lakes. A combined focus of Classroom Culture was implemented to improve our students' sense of value in the Lakes community through academics, activities, and athletics. This work will continue in the 2023-24 school year.

Learn

- ❖ Essential learning targets along with baseline data were established and incorporated into instruction creating engaging, equitable, and unique opportunities for students to find their passion in life. An equitable grading philosophy was studied and reassessments will be implemented the beginning of 2023-24 school year.

Lead

- ❖ Classroom Culture programming will deepen diversity, inclusion, and equity training as a whole school. Leadership opportunities for all students to be career and life ready will continue to widen.

Panorama Survey Spring 2023

Supportive Relationships Metric

District

National

88%

Your result

Compared to schools across the country, your score is near the 90th percentile on this topic.

Most frequent

0 10 20 30 40 50 60 70 80 90 100

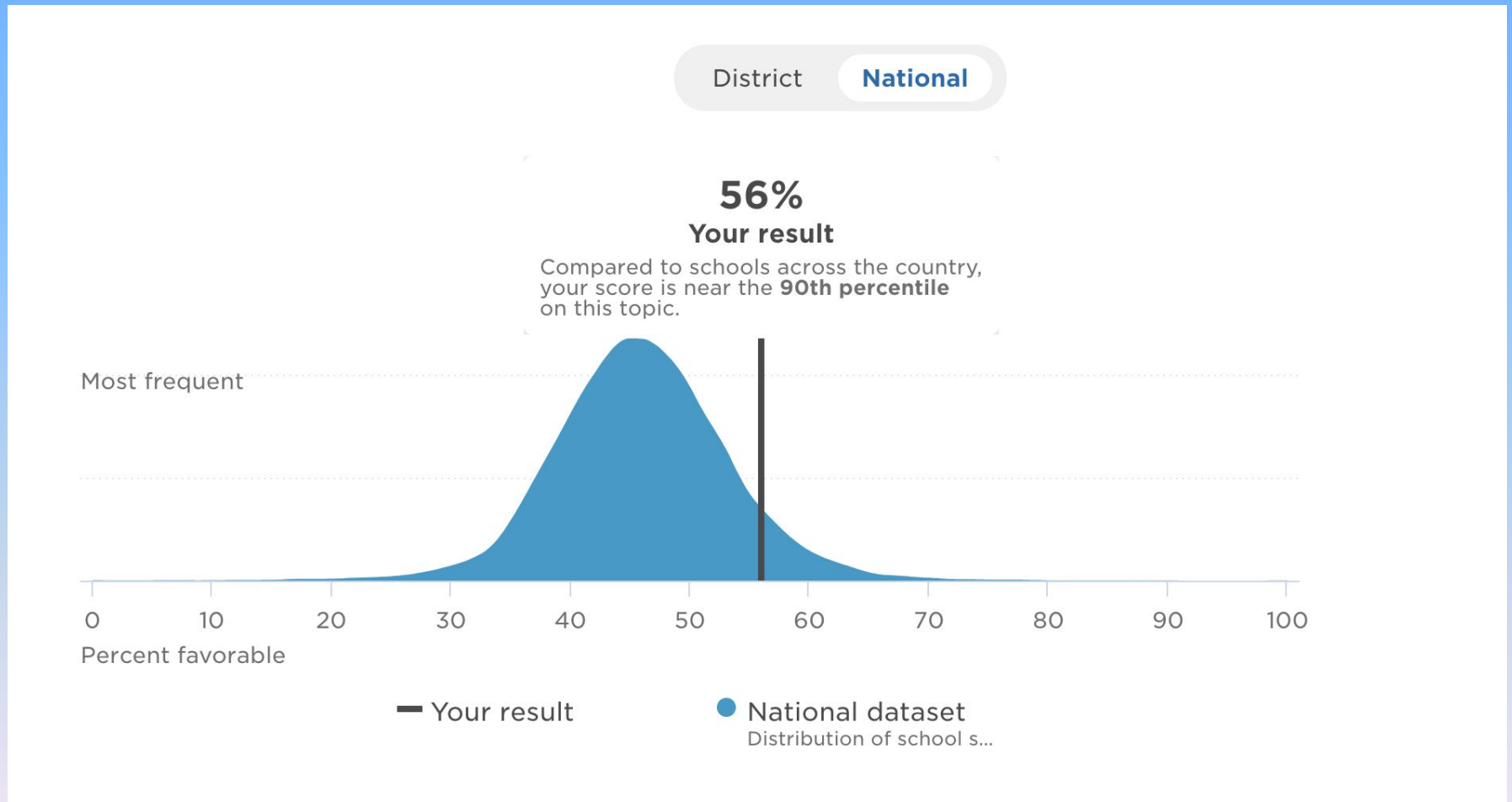
Percent favorable

— Your result

● National dataset
Distribution of school s...

Panorama Survey Spring 2023

Emotional Regulation Metric



Equity, Diversity, Inclusion

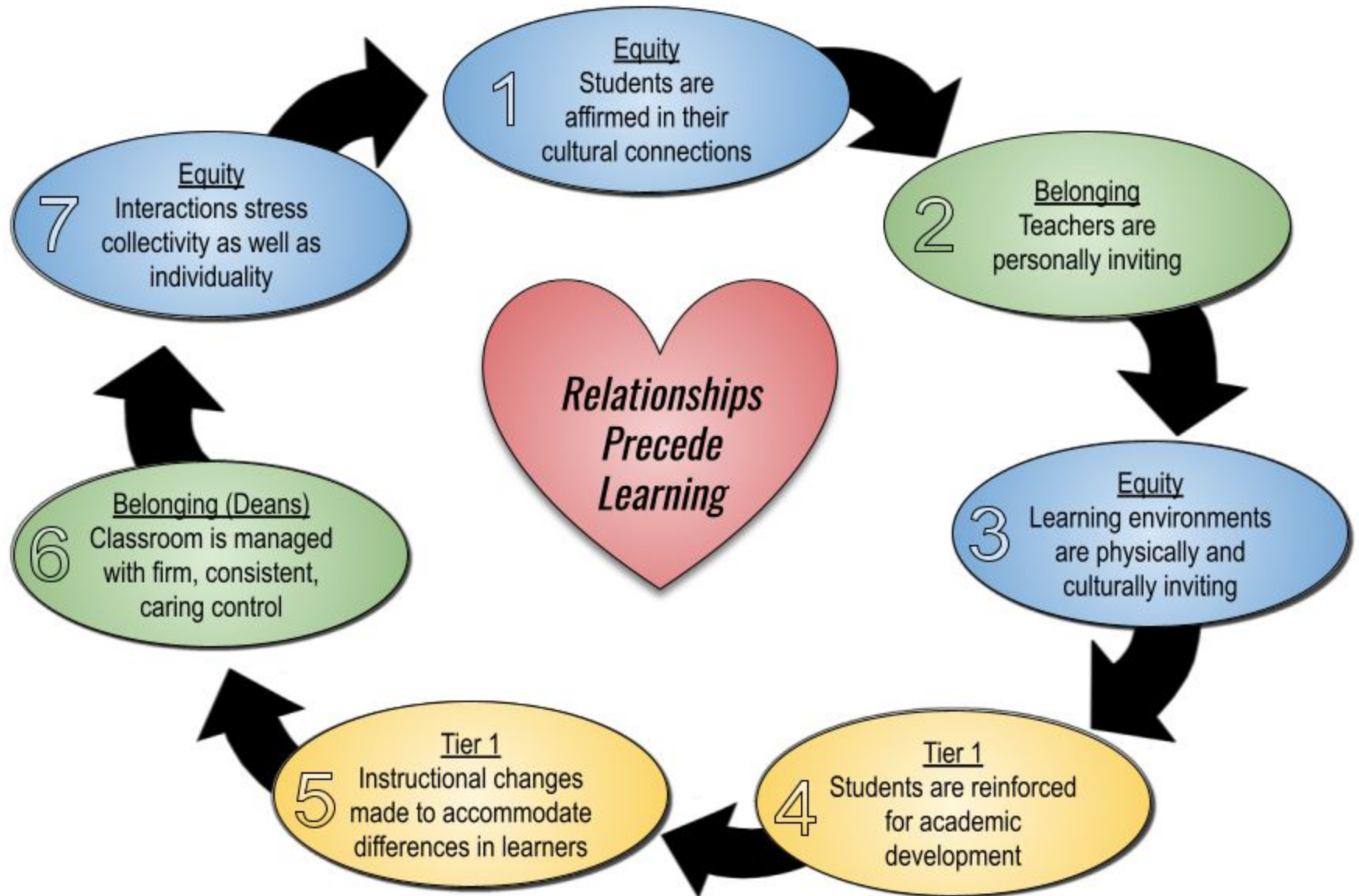
Sense of Belonging

Tier 1 Supports



To create a successful Classroom Culture, we will blend Equity/Diversity/Inclusion, Sense of Belonging, and Tier 1 Supports daily at Lakes Community High School to ignite passion and discovery in EVERY student.

7 Principles for Culturally Responsive Teaching



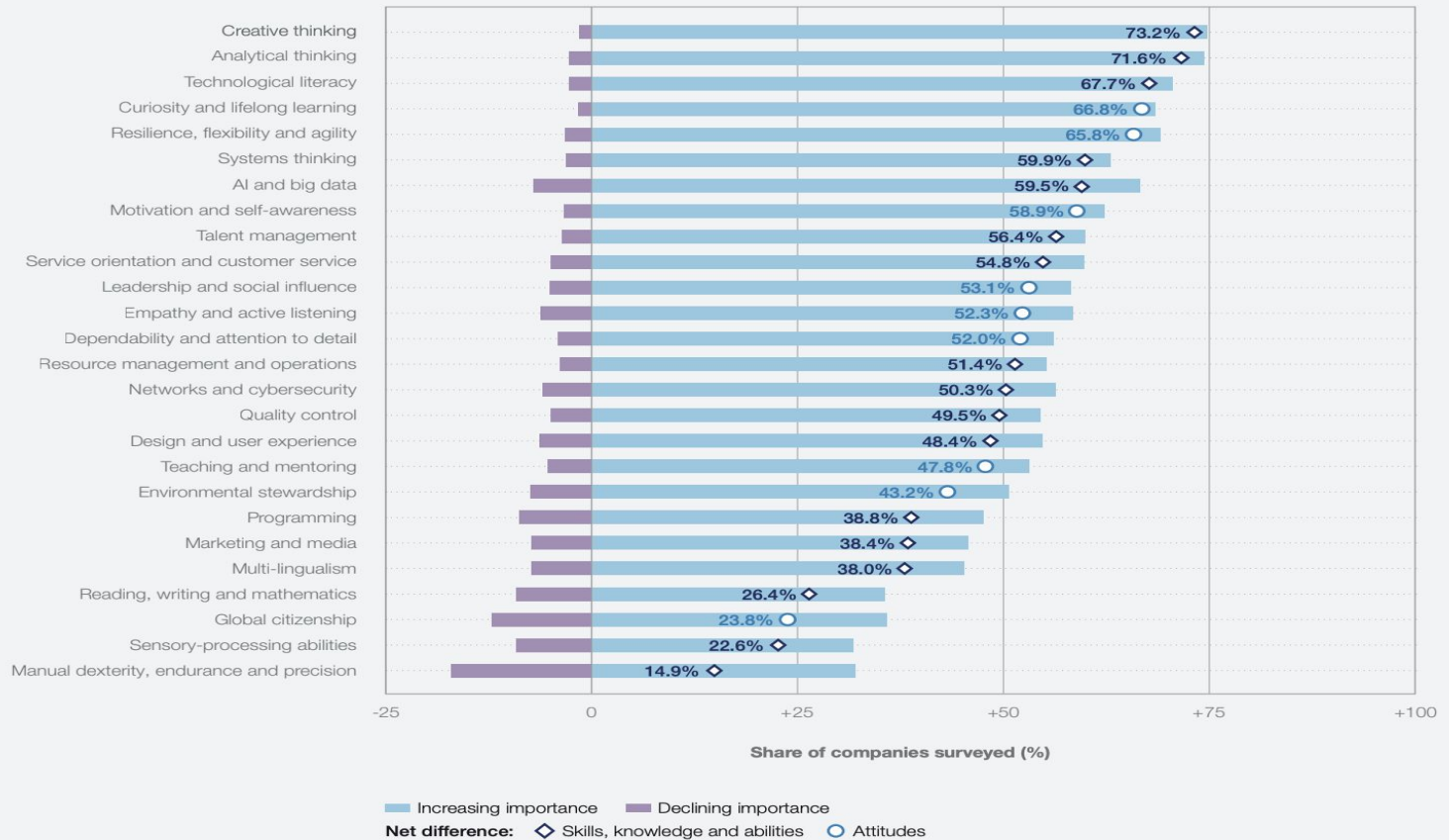
Creating Culturally Responsive Classrooms, 1997, Shade, Kelly, and Oberg. Order from: APA Order Department, PO Box 92984, Washington, DC 20090-2984

Skills On The Rise

FIGURE 4.3

Skills on the rise

Share of organizations surveyed which consider skills to be increasing or decreasing in importance, ordered by the net difference.



Source

World Economic Forum, Future of Jobs Survey 2023.

Note

The Future of Jobs Survey uses the World Economic Forum's Global Skills Taxonomy. The share of companies which consider skills to be of stable importance to their workers is not plotted.

2023- 2026 Goals



Discover.Lead.Persevere 2023-2026

GAME PLAN - We have two goals this year:

- **Improve Community, Collaboration & Culture**
- **Meeting the Individual Needs of Students**

We meet this goal by:

- **Expand the content breadth and voice depth of outward communications to the community specifically through our website and social media**
- **Analyze checkpoint freshman on track to graduate data during the 2022-23 school year to BLT, Weekly Wisdom, and MTSS**
- **Leverage Grade Level Belonging, Tier 1, and Equity Teams**

PORTRAIT OF A GRADUATE



Thinks
Critically



Embraces
Diversity



Is Emotionally
Intelligent



Is Courageous



Collaborates



Communicates



**COMMUNITY
HIGH SCHOOL
DISTRICT 117**
ANTIOCH HIGH SCHOOL | LAKES HIGH SCHOOL



COMMUNICATES

- Articulates ideas effectively using clear and concise oral and written communication
- Initiates and sustains meaningful conversation acting with empathy and respect in a variety of settings
- Consistently works toward developing an understanding of audience and self



IS EMOTIONALLY INTELLIGENT

- Practices responsible decision-making and considers impact on others
- Builds and sustains strong, healthy relationships with peers and adults
- Employs a growth mindset that includes self-regulation, motivation, and resiliency



THINKS CRITICALLY

- Leverages curiosity to identify and solve problems while taking intellectual risks
- Examines and challenges assumptions in making decisions based on a thorough understanding of authentic evidence
- Consistently improves the quality of one's own thinking by skillfully analyzing, assessing, and reconstructing



COLLABORATES

- Inspires and motivates others through the sharing of ideas toward a common purpose
- Takes responsibility for self and team through shared, focused leadership
- Actively listens to discover mutual understanding by providing and receiving feedback



IS COURAGEOUS

- Creates, monitors and reflects upon ambitious goals
- Advocates for self and others in a socially responsible and empathetic manner







EMBRACES DIVERSITY





- Finds opportunities to embrace and affirm one's authentic self
- Actively works to develop empathy for others
- Identifies own biases and reflects to reduce impact on others



COMMUNITY
HIGH SCHOOL
DISTRICT 117

PORTRAIT OF A GRADUATE

Portrait of a Graduate Competency	Goal From 2023-2026 Strategic Plan	Metric	2024 Target	Data Report Date	Status	Result
	<i>integrate instructional supports into practice to improve student performance</i>	% of juniors who did not meet their expected SAT composite benchmark growth (ECRISS) at the low, average and high propensity after sophomore year, who then met or exceeded their expected benchmark growth after junior year	55%	9/21/24	work n... ▾	___% met or exceeded expected growth
	<i>review current MTSS procedures, intervention strategies & outcomes</i> <i>align the programs with research-based best practices and improve the effectiveness of MTSS</i>	% of all students with a grade <70% on October 2, 2023 whose parent/guardian conferences with the teacher prior to October 23, 2023. Collect baseline Behavior, Attendance, & Grades data (BAG) and set annual goals for these three measures starting in 2024-25.	95% TBD for 2025	11/15/23 11/15/23	work n... ▾	___% of families completed conference
	<i>in the areas of Social-Emotional Learning and student support, improve, and expand the awareness & availability of programs and resources</i>	Increase % of positive responses on the <i>Supportive Relationships</i> metric in the Panorama student survey. Increase % of positive responses on the <i>Emotional Regulation</i> metric in the Panorama student survey.	+2% (Spring 2027: 87%) +2% (Spring 2027: 55%)	5/16/24 5/16/24	work n... ▾	___% favorable responses ___% favorable responses
	<i>achieve equitable access & representation in courses</i>	Annually decrease the disproportionality gaps in the percentage of graduates who earned a credit in 2 or more Honors or AP courses by income and race. Develop a baseline metric for evaluating the accessibility of our dual credit courses and set a goal to increase access for 2024-25.	Reduce by 10% in each category until parity TBD for 2025	5/16/24 5/16/24	work n... ▾	Low-income enrollment gap reduced by ___% Black enrollment gap reduced by ___% Hispanic enrollment gap reduced by ___%

Portrait of a Graduate Competency	Goal From 2023-2026 Strategic Plan	Metric	2024 Target	Data Report Date	Status	Result
	<i>review current programs that provide career & community pathways</i>	% of students who take a career interest survey and discuss their current postsecondary plan with a counselor by the end of 9th grade	95%	5/16/24	work n... ▾	___% of 9th graders
	<i>expand, enhance and enrich those real-life opportunities</i>	% of graduates that have demonstrated career exploration by meeting 1+ of the following: - completed 2+ semesters in the same CTE program of study - completed 2+ semesters at Tech Campus - completed an internship or team based challenge	66%	4/18/24	work n... ▾	___% of graduates in Class of 2024
	<i>enhancing school, home and community engagement</i>	After administering a survey to all families regarding preferred communication channels, we will development a baseline target for the % of families who engage with district communications	TBD for 2025	5/16/24	work n... ▾	
	<i>evaluate current participation levels in extracurricular activities & athletics to identify barriers & recommend strategies to enhance inclusiveness</i>	% of all students who participate in 1+ extracurricular activity, athletic team, or attend 3+ school sponsored events beyond the school every year	100%	6/20/24	work n... ▾	9th - 10th - 11th - 12th -

2023- 2024 Goals



2023- 24 Department Goals

- **Career & Tech Ed** – By the end of the 2023-2024 school year, we will begin working on pathway components by completing 2 team challenges and 1 career exploration into each sub department.
- **English** – Use PSAT/NMSQT data and other assessment data to identify and monitor students struggling to meet expected growth in specific skills, and establish systems of additional support for students who demonstrate challenges in meeting expected growth targets.

2023- 24 Department Goals

Fine Arts

- During the 2023-2024 school year, community communication will increase via genre specific newsletters and web pages connected to School's home page
- During the 2023-2-24 school year, the Fine Arts department will support District initiatives by reviewing course descriptions to infuse language that highlights the Portrait of a Graduate. Also, prioritizing upper level classes, but use Late-In time to build evolved course descriptions for all Fine Arts classes

2023- 24 Department Goals

- **Math** – During the 2023-2024 school year, all classes will incorporate standardized test prep into their classes 6 times. The practice will be in multiple formats, including but not limited to; practice multiple choice, free response questions, DESMOS applications, AP Style questioning, and college placement questions.
- **PE/Health/Driver Ed** – In the 2023-24 school year, fitness testing data will be continued to be used to compare and examine student growth using Welnet. At a minimum 3x year students will be recognized on their growth based on Welnet data. A minimum of 3 times per week, teachers will practice push-ups, sit-ups, sit and reach, and a form of cardiovascular endurance during warm-ups.

2023- 24 Department Goals

- **Science** – Each Science course offered in D117 will contain at least 2 laboratory-based, Problem-based learning activities per year.
 - As a Department we will discuss and explore the 6 Facets of the Portrait of a Graduate and how they specifically apply to the Science Classroom
- **Social Studies** – By the end of the 2023-24 school year, the D117 Social Studies Department will have developed common rubrics for DBQ's and structured discussions that identify and evaluate essential skills that students need to be successful in our Social Studies classes.
 - By the end of the 2023-24 school year, teachers will have identified and incorporated strategies to develop student and teacher driven questions that promote critical thinking through inquiry and investigation.

2023-24 Department Goals

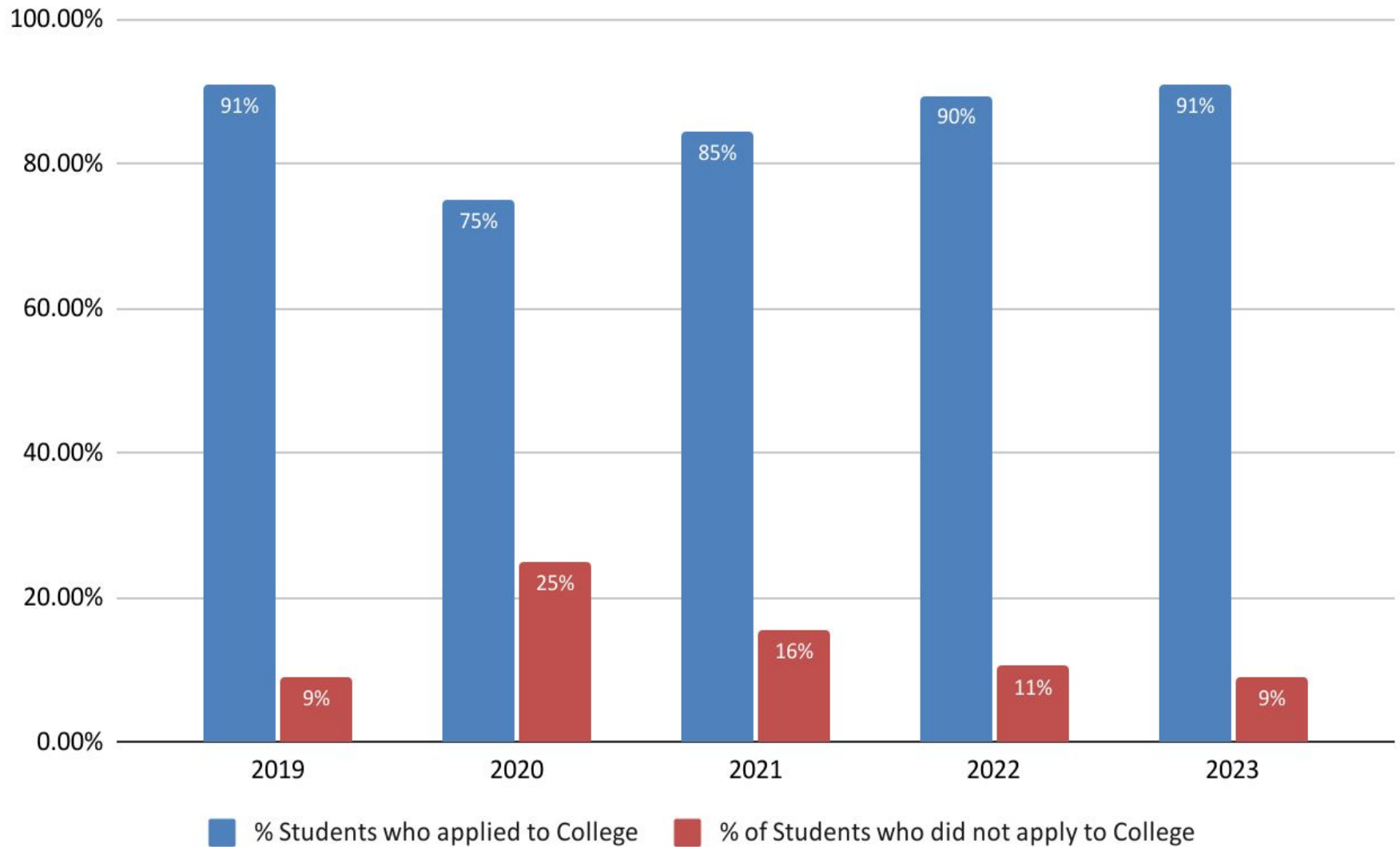
- **World Language** – By the end of the 2023-2024 school year, the World Language department will continue to incorporate 90% target language in our classrooms and begin vertical alignment to AP language standards.
- **Student Services** – By the end of the 2023-2024 school year, the Student Services department will collaborate with district counterparts to align Portrait of a Graduate competencies with students post-secondary outcomes/goals.
- **ILC**- By the end of the 2023-2024 school year, the ILC will align their research tools to the Portrait of a Graduate competencies and the computer literacy skills continuum.

Supporting Data

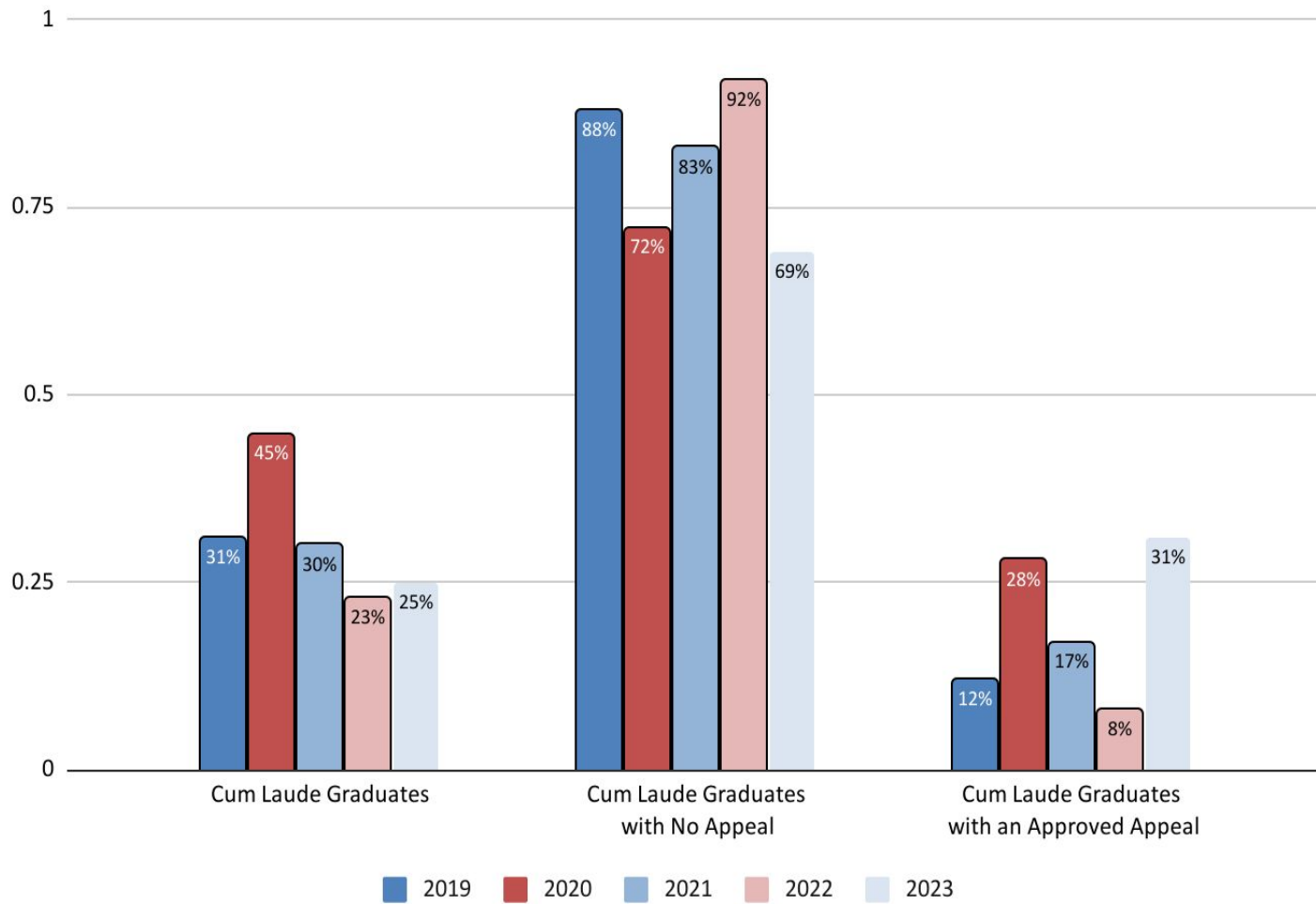


Photo by Allison Rial
Class of 2022

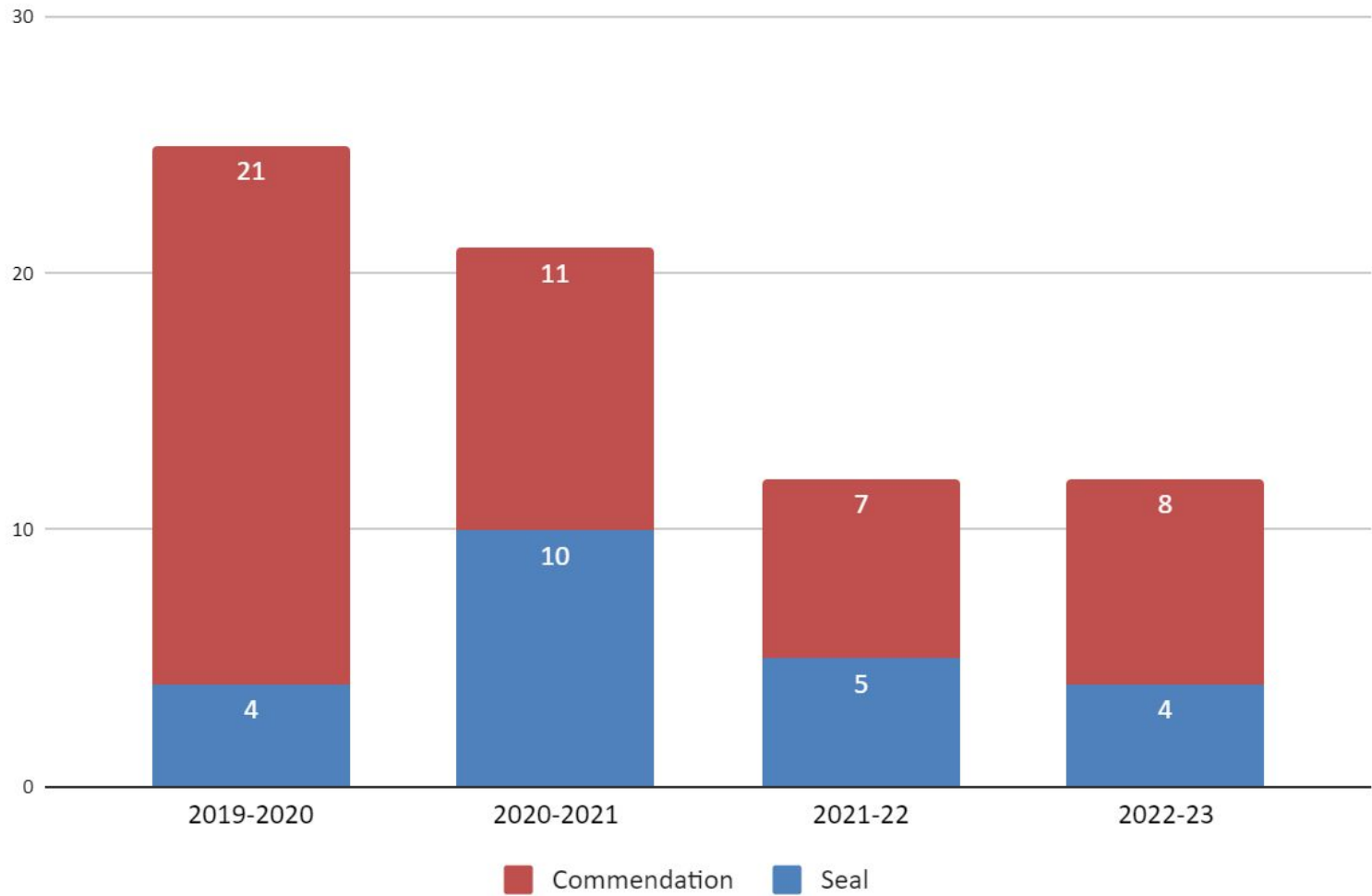
College Applications



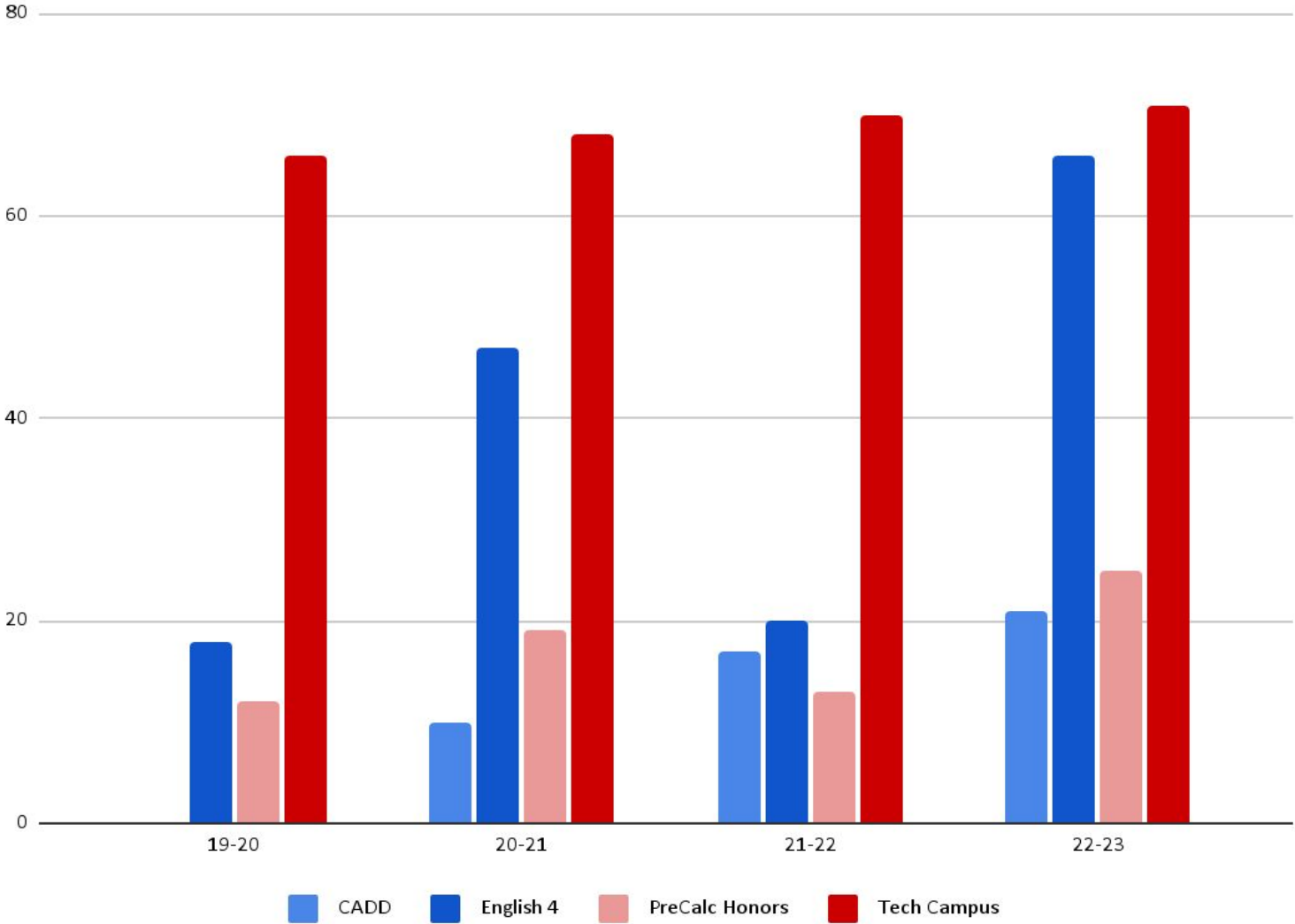
Cum Laude by Percentage



Seal of Biliteracy



Dual Enrollment and Tech Campus Student Population



Athletic Data

LCHS

	GPA			
	Class of 2023	Class of 2024	Class of 2025	Class of 2026
Athletes	3.54	3.64	3.73	3.51
Non-Athletes	3.08	3.17	3.2	3.35

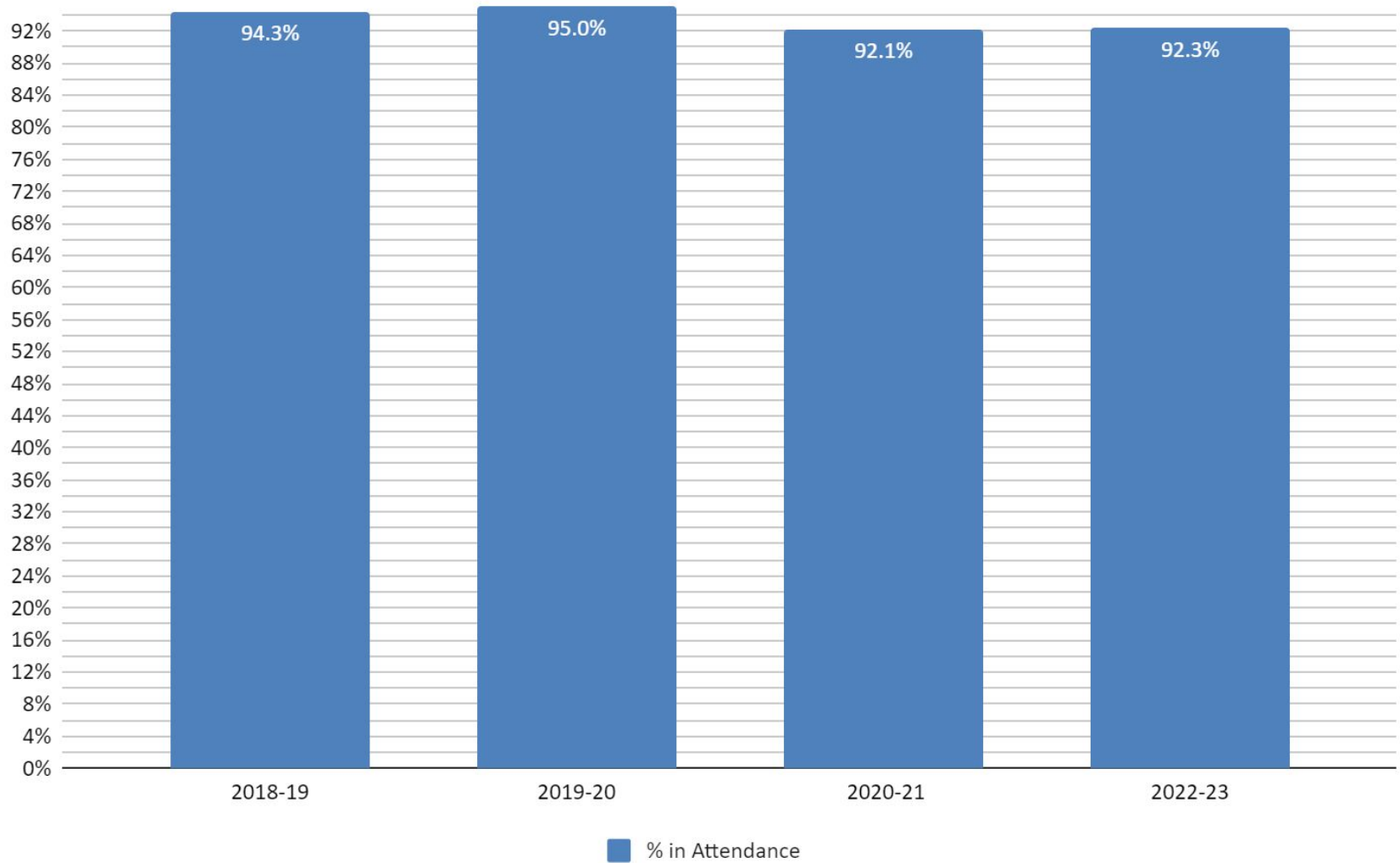
2022-2023 : 924 Participating Athletes

	Fall	Winter	Spring
Female	194	110	131
Male	184	93	212

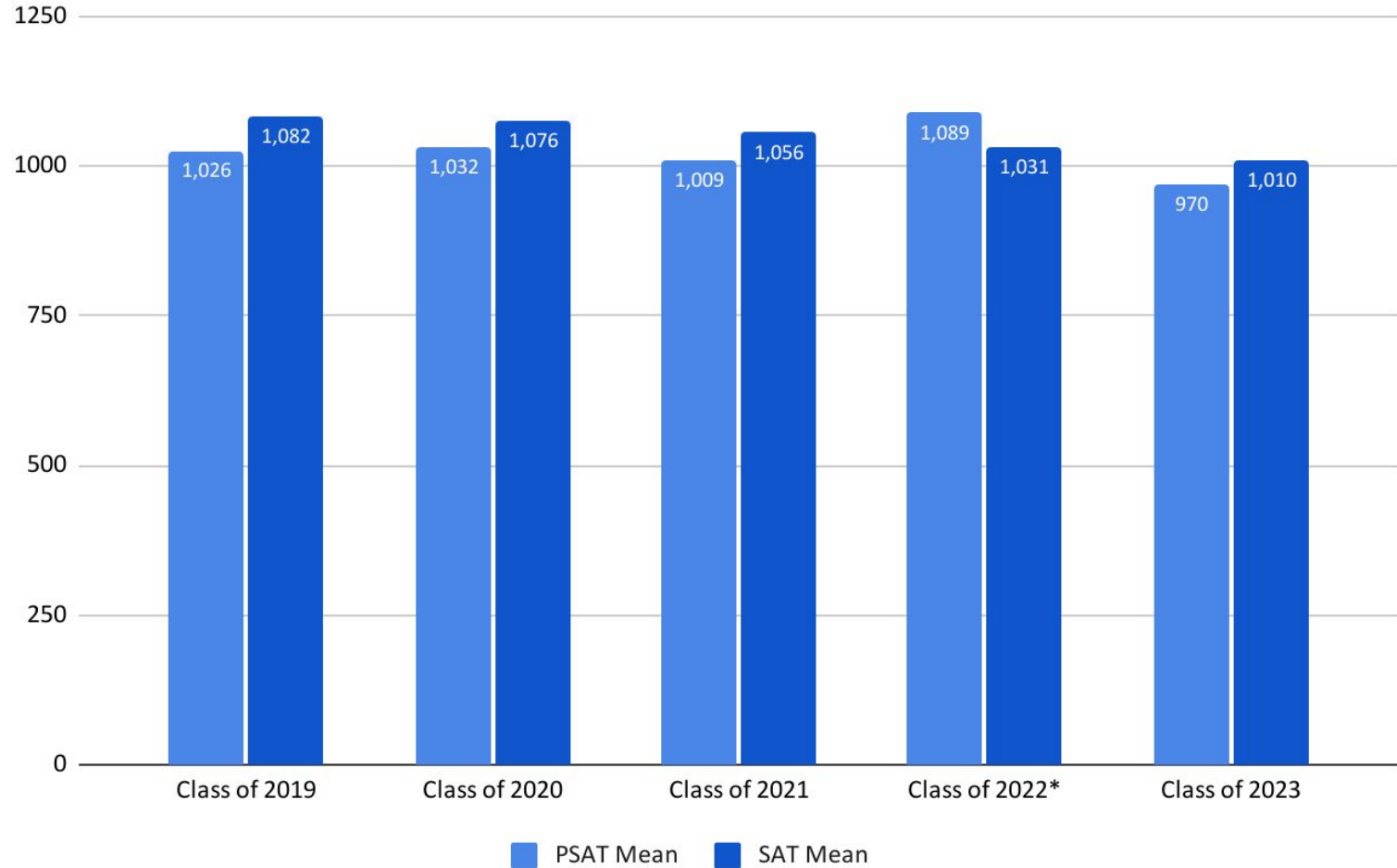
Lakes Community High School is a CRISS Five Star School

- **All faculty and administration trained in CRISS strategies.**
- **One on-site District Level Trainer.**
- **School provides regularly scheduled follow-up to all trained teachers and disseminates professional readings to encourage professional growth.**
- **The school continually assesses the appropriateness and effectiveness of the Project CRISS Program.**

Average Daily Attendance at LCHS



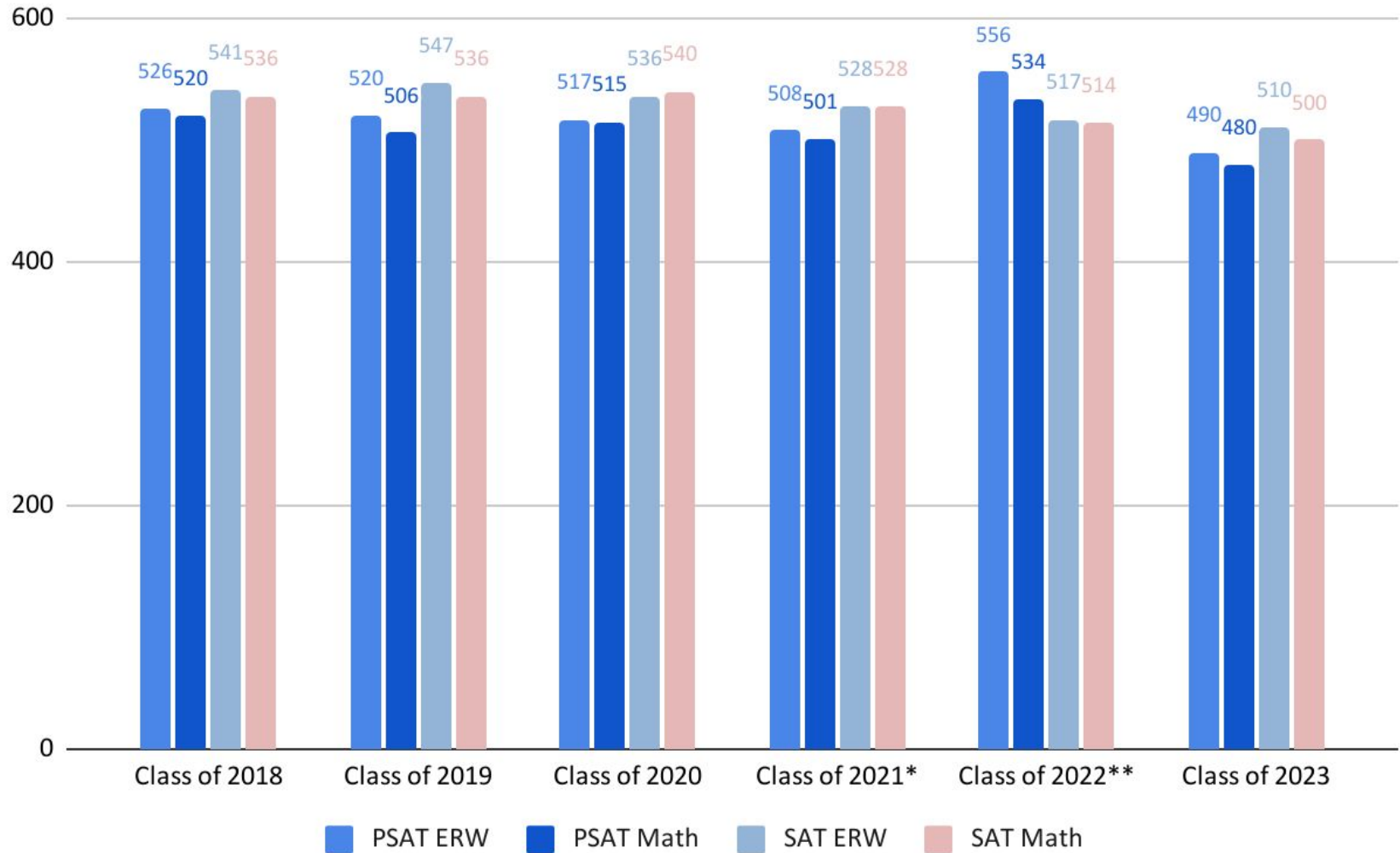
PSAT to SAT State Test Growth Over Time



***SAT TESTING FOR THE CLASS OF 2021 WAS THE FALL OF 2020 DUE TO COVID. NORMAL SAT TESTING IS SPRING OF JUNIOR YEAR.**

****PSAT/NMSQT TESTING FOR THE CLASS OF 2022 WAS ONLY FOR STUDENTS WHO SIGNED UP TO TAKE IT.
THIS WAS DUE TO SOCIAL DISTANCING FOR COVID RESTRICTIONS.**

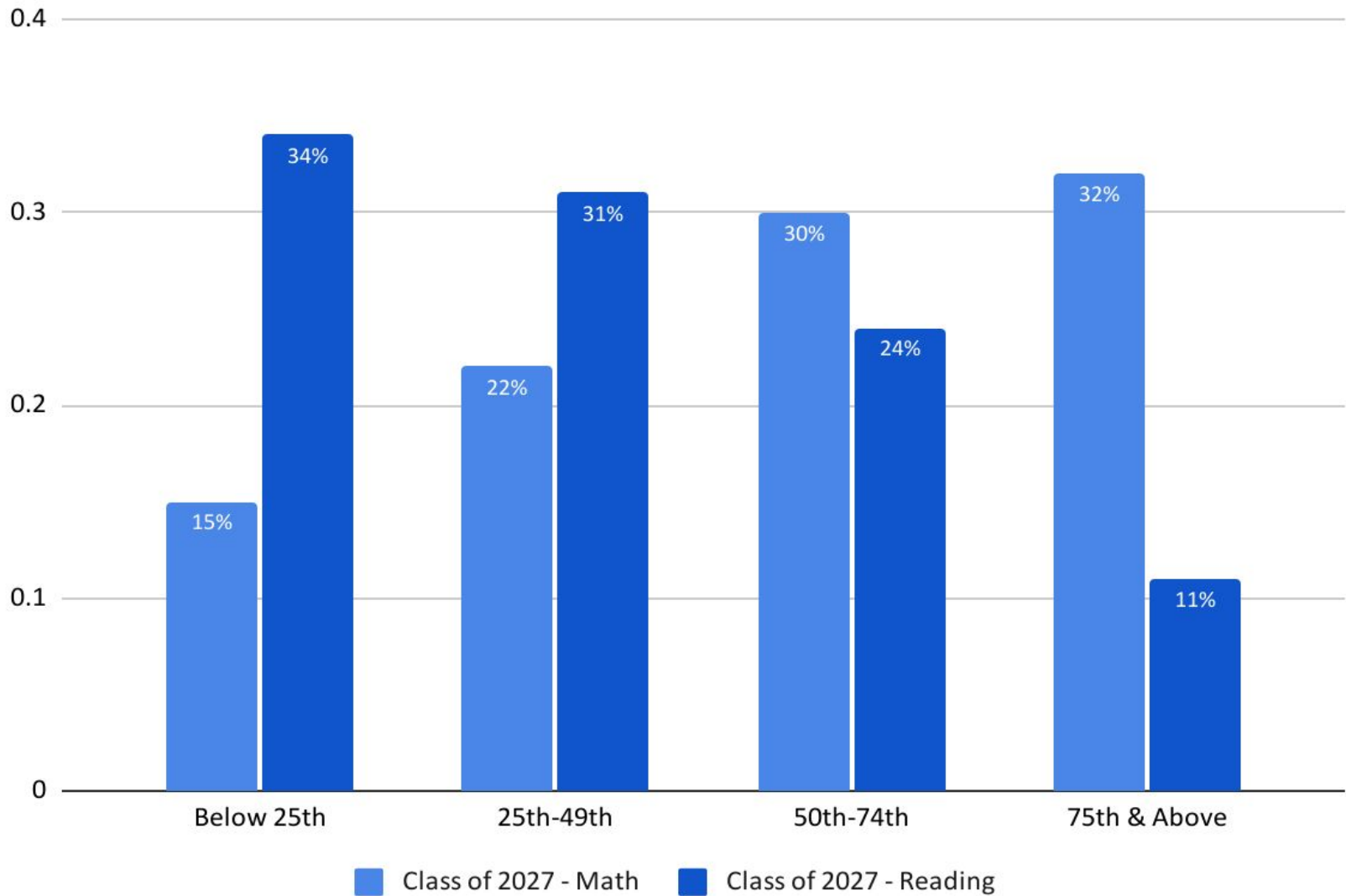
PSAT to SAT State Test Subject Growth Over Time



*SAT TESTING FOR THE CLASS OF 2021 WAS THE FALL OF 2020 DUE TO COVID. NORMAL SAT TESTING IS SPRING OF JUNIOR YEAR.

**PSAT/NMSQT TESTING FOR THE CLASS OF 2022 WAS ONLY FOR STUDENTS WHO SIGNED UP TO TAKE IT. THIS WAS DUE TO SOCIAL DISTANCING FOR COVID RESTRICTIONS.

STAR Enterprise Assessment - Percentile Rank by Percent of Students



Class of 2026 ECRISS Growth Data

Met expected growth on the spring PSAT for areas of composite, ELA, and math

2022-2023 Composite Grade 9

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	593	NA	0.15 	

2022-2023 ELA Grade 9

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	593	73%	0.00 	

2022-2023 Mathematics Grade 9

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	591	59%	0.24 	

Class of 2025 ECRISS Growth Data

Met expected growth on the spring SAT for areas of composite, ELA, and math

2022-2023 Composite Grade 10

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	640	NA	0.02 	



2022-2023 ELA Grade 10

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	636	73%	0.01 	

2022-2023 Mathematics Grade 10

System

Test	Student Count	Proficiency	Growth	Chart
Spring PSAT	633	49%	0.01 	

Class of 2024 ECRISS Growth Data

Met expected growth on the fall & spring SAT for areas of composite, ELA, and math



2022-2023 Composite Grade 11

System

Test	Student Count	Proficiency	Growth	Chart
Spring SAT	539	NA	-0.01 	
Fall PSAT	520	NA	0.00 	





2022-2023 ELA Grade 11

System

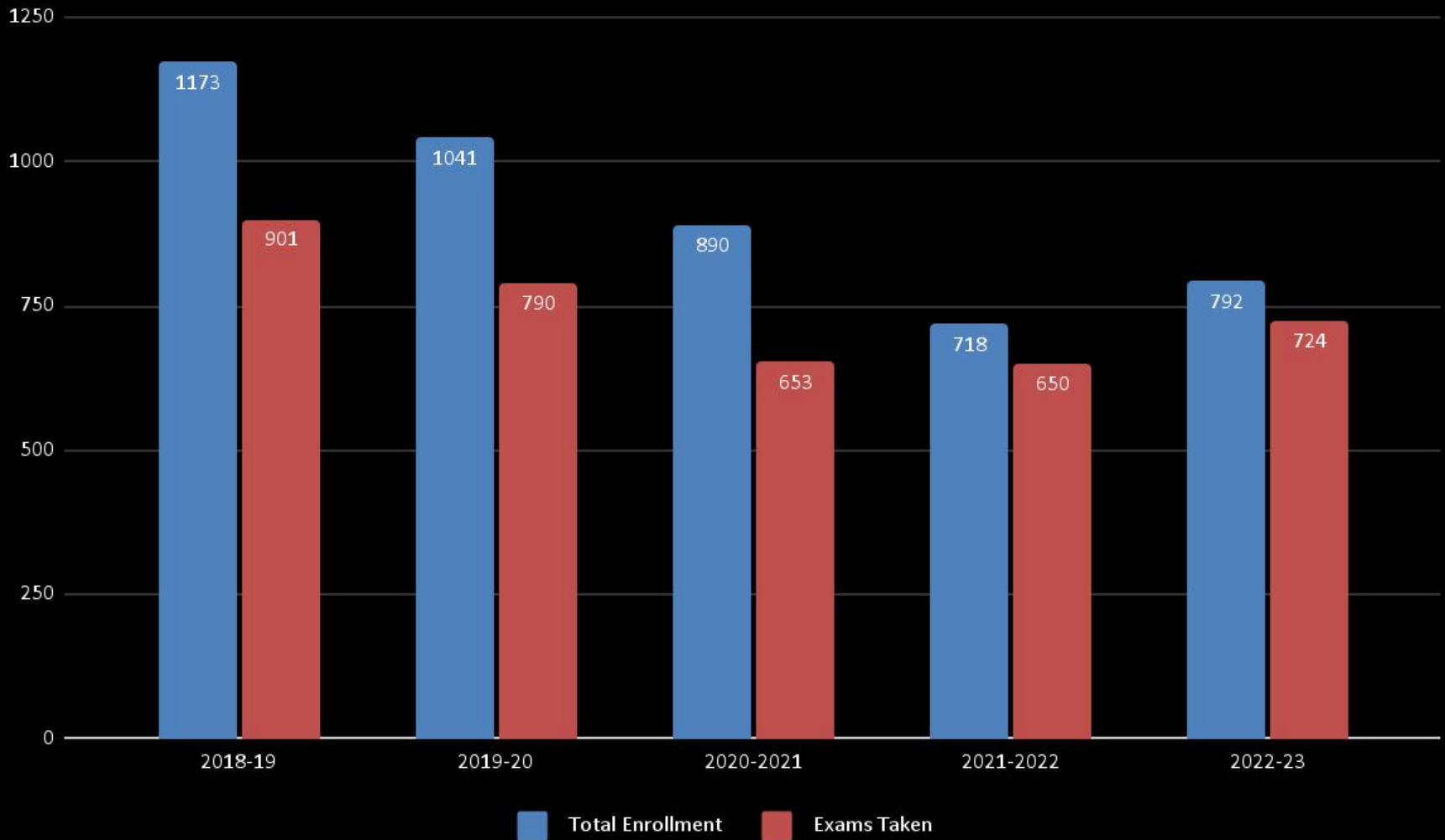
Test	Student Count	Proficiency	Growth	Chart
Spring SAT	539	66%	0.00 	
Fall PSAT	520	65%	0.00 	

2022-2023 Mathematics Grade 11

System

Test	Student Count	Proficiency	Growth	Chart
Spring SAT	539	42%	-0.01 	
Fall PSAT	520	38%	-0.01 	

Advanced Placement Enrollment and Exams Taken at LCHS



Advanced Placement Data

	2018	2019	2020	2021	2022	2023
Total Seat Enrollment	1042	1173	1041	890	718	792
Percent Change in Enrollment	-8.4	12.6	-11.3	-14.5	-19.3	10.3
Number of Exams	674	951	792	651	650	724
AP Students Testing	410	489	429	378	400	438
Percent of AP Students with 3+	80.7	70.1	73.7	55	61	60

Congratulations! Lakes Community High School has earned Silver recognition on the 2023 AP School Honor Roll.

Class of 2023

AP School Honor Roll Metrics	Criteria				Your School [?]	
	Bronze	Silver	Gold	Platinum		
College Culture [?]	40%	50%	65%	80%	55% <i>(155/284)</i>	Silver
College Credit [?]	25%	30%	35%	50%	36% <i>(101/284)</i>	Gold
College Optimization [?]	2%	5%	10%	15%	15% <i>(43/284)</i>	Platinum

Your School [?]

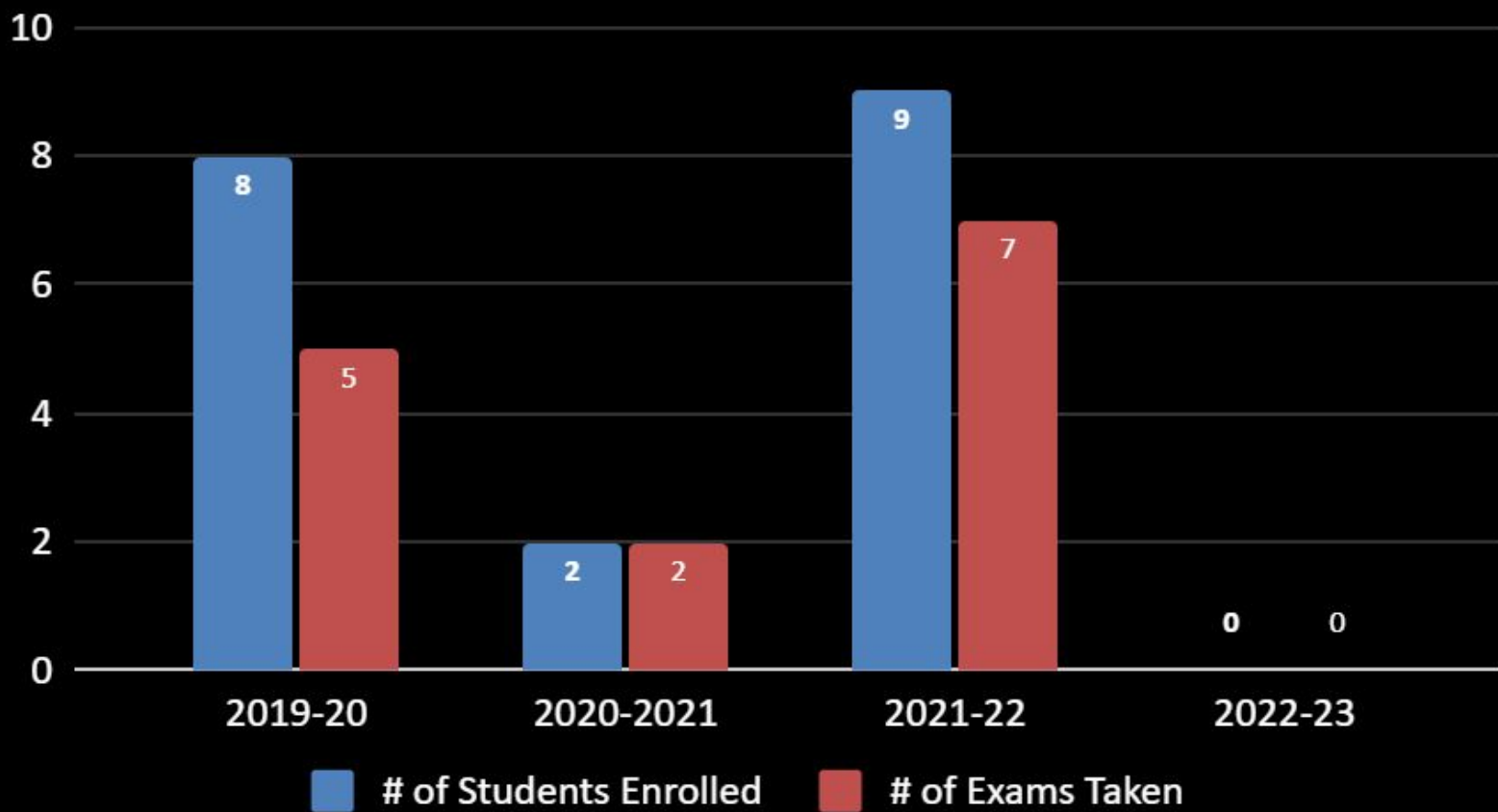


SILVER
Your school achieved all Silver criteria!

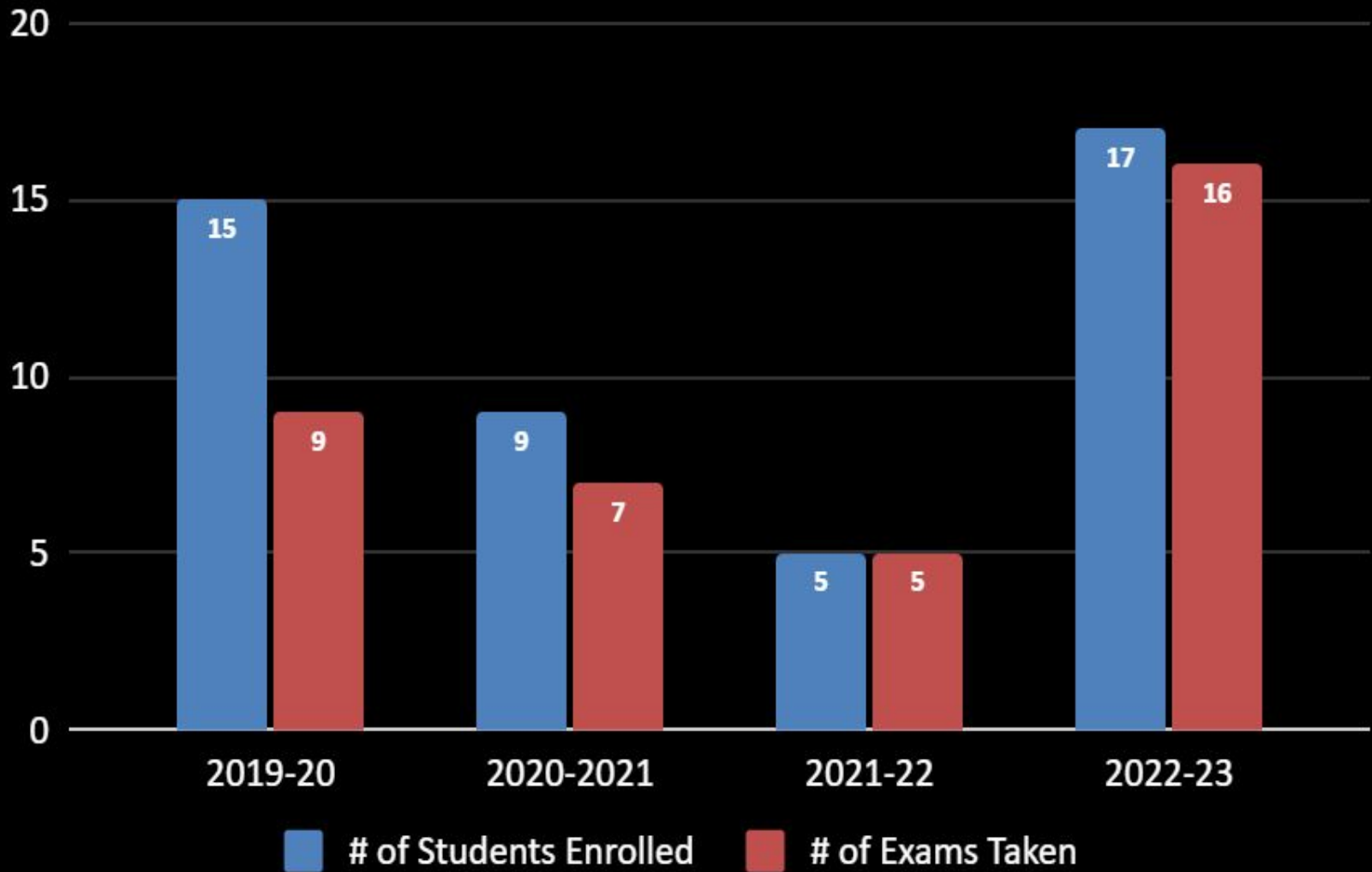
To qualify for the 2023 AP School Honor Roll, schools must meet or exceed the criteria for a given recognition level for all three metrics. This report always reflects the most recent data for your organization. Additional information about the AP School Honor Roll can be found on [AP Central](#).

AP Drawing

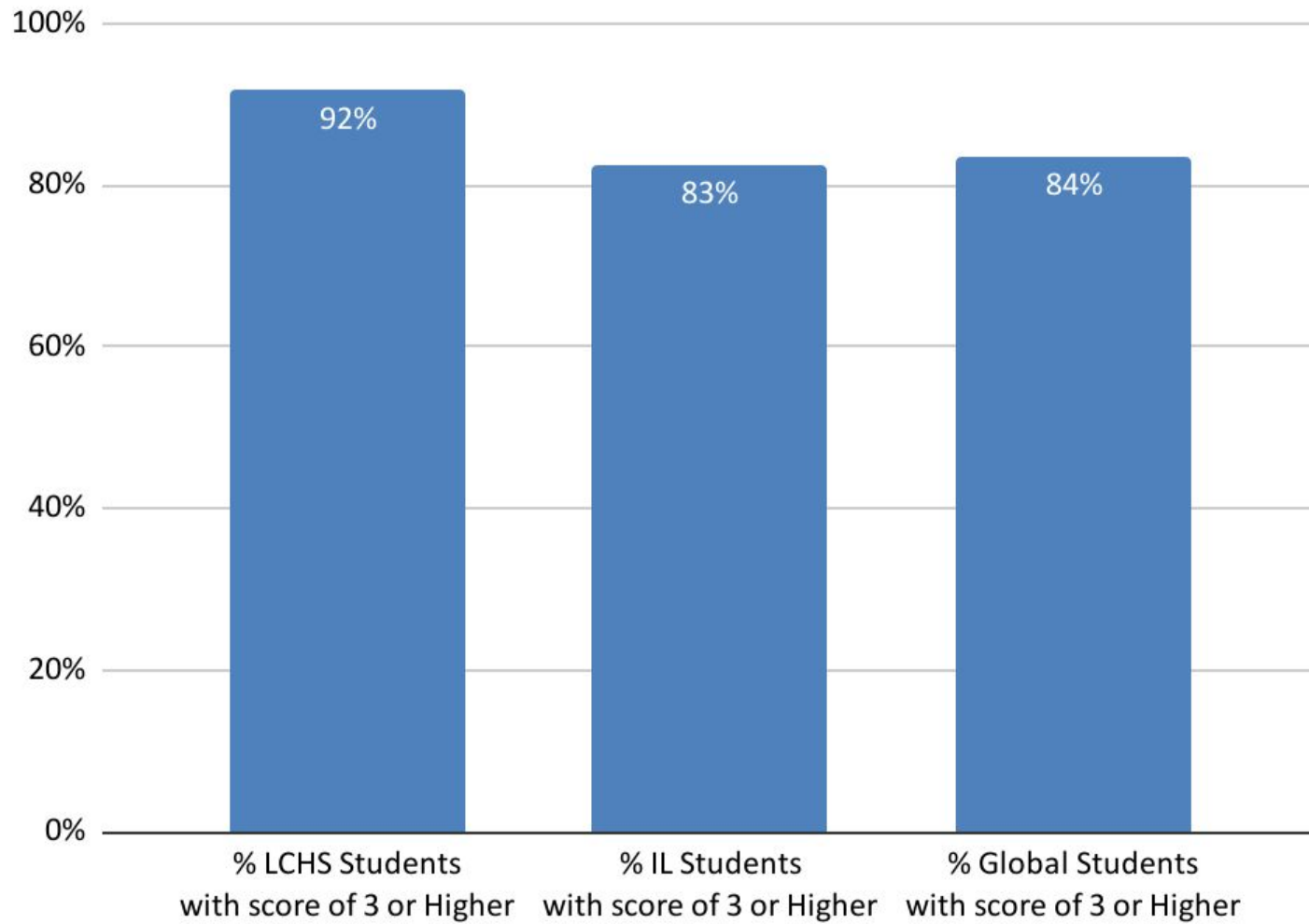
No student enrolled in 2022-23



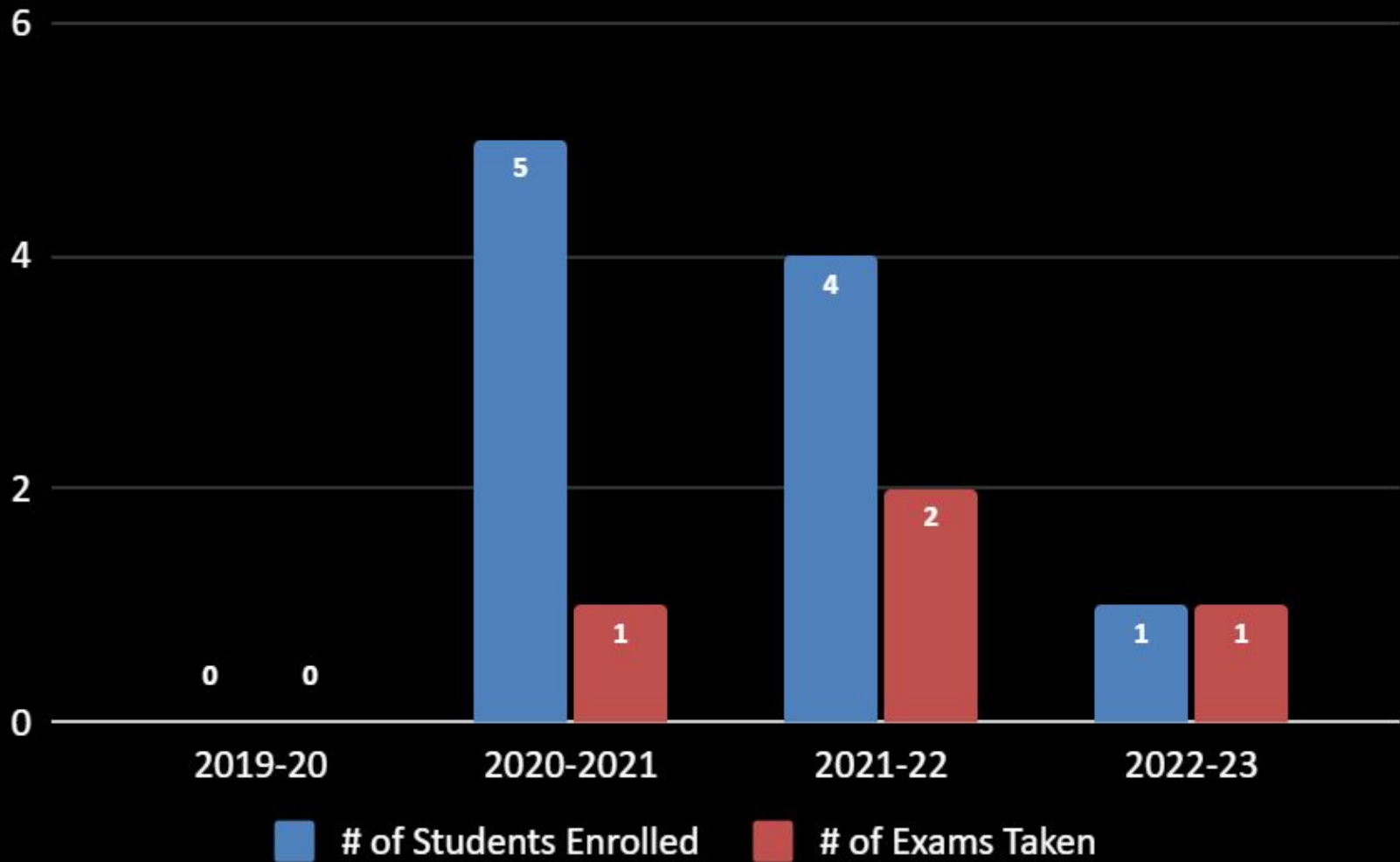
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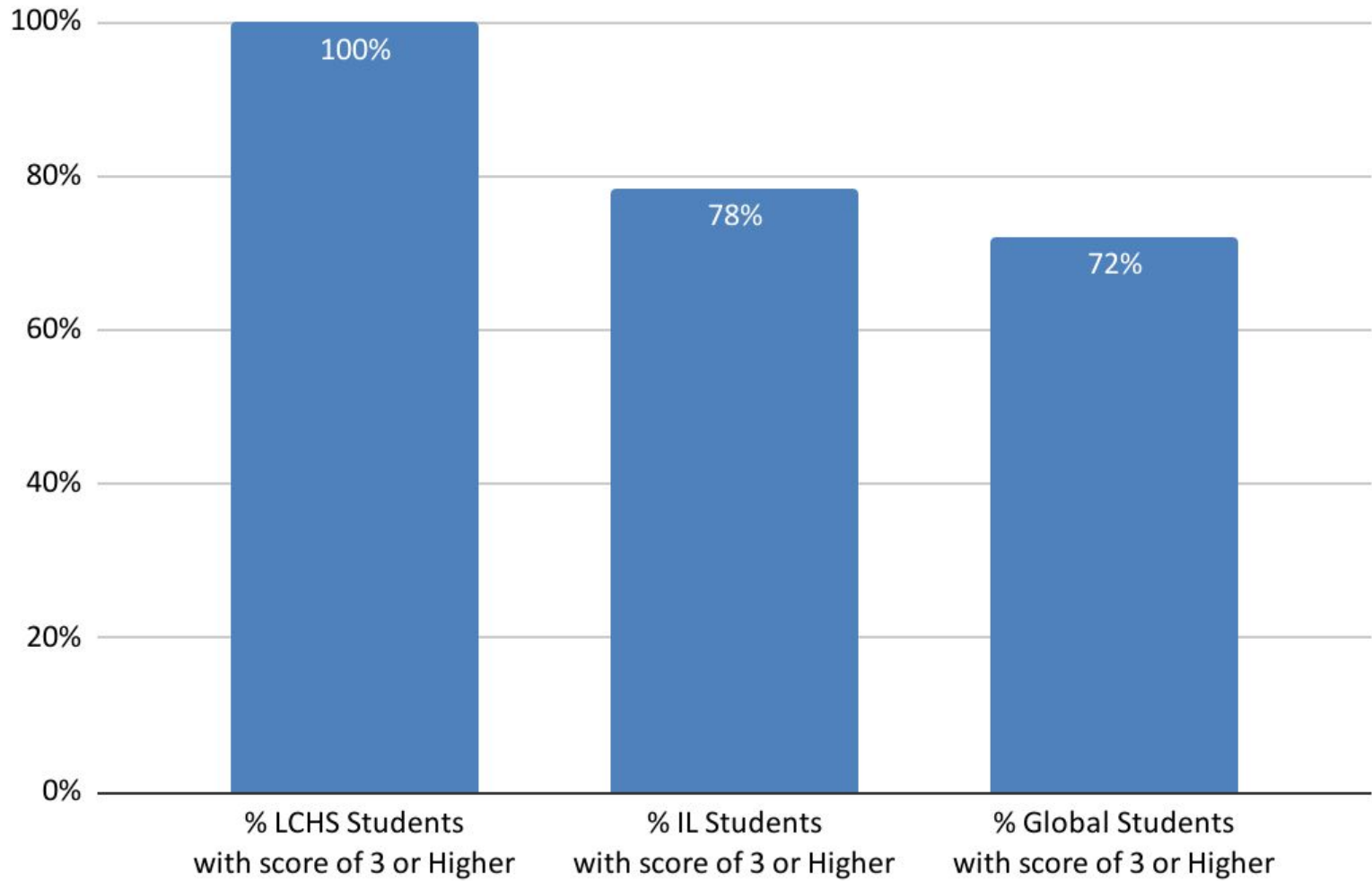
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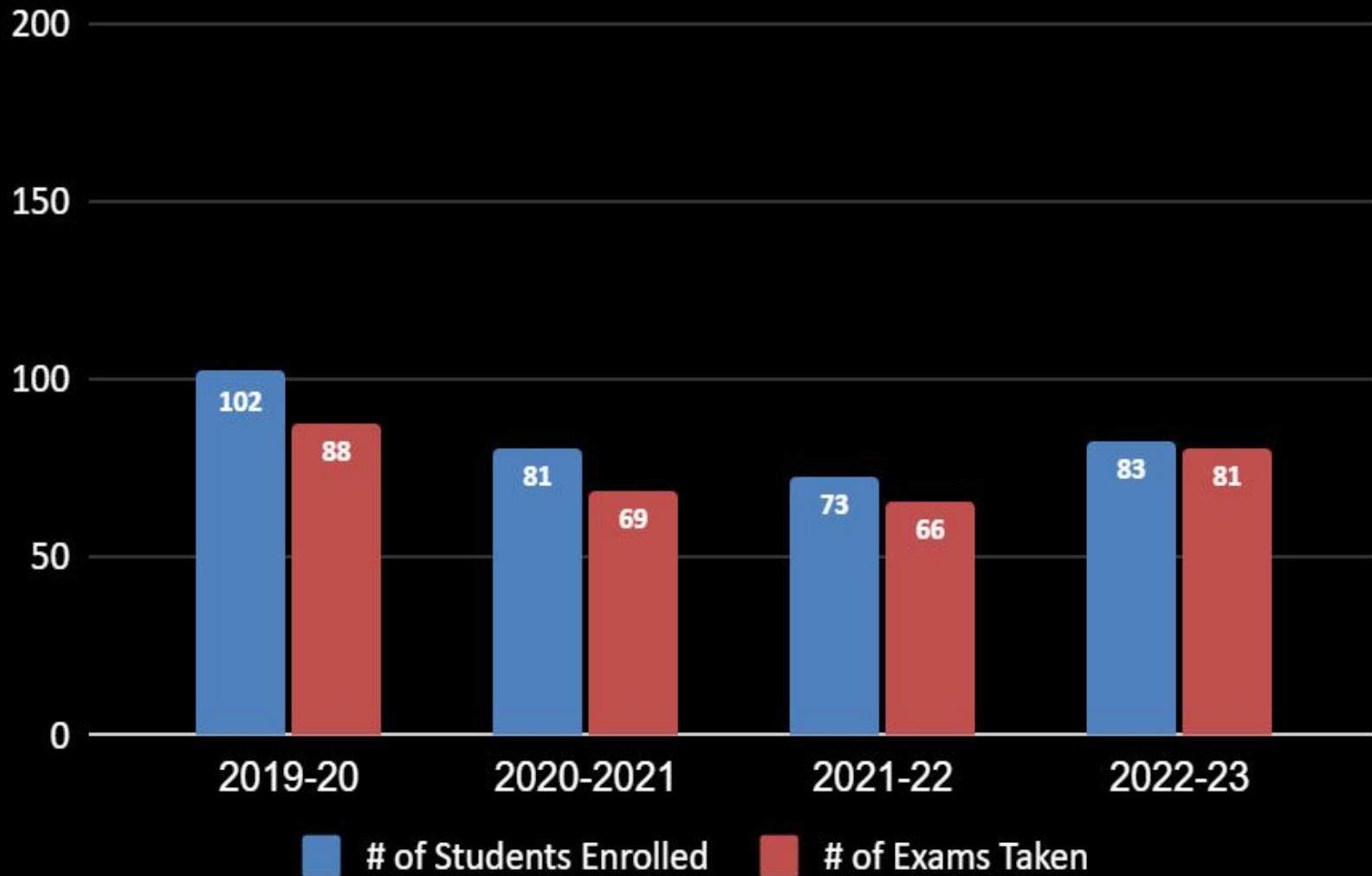
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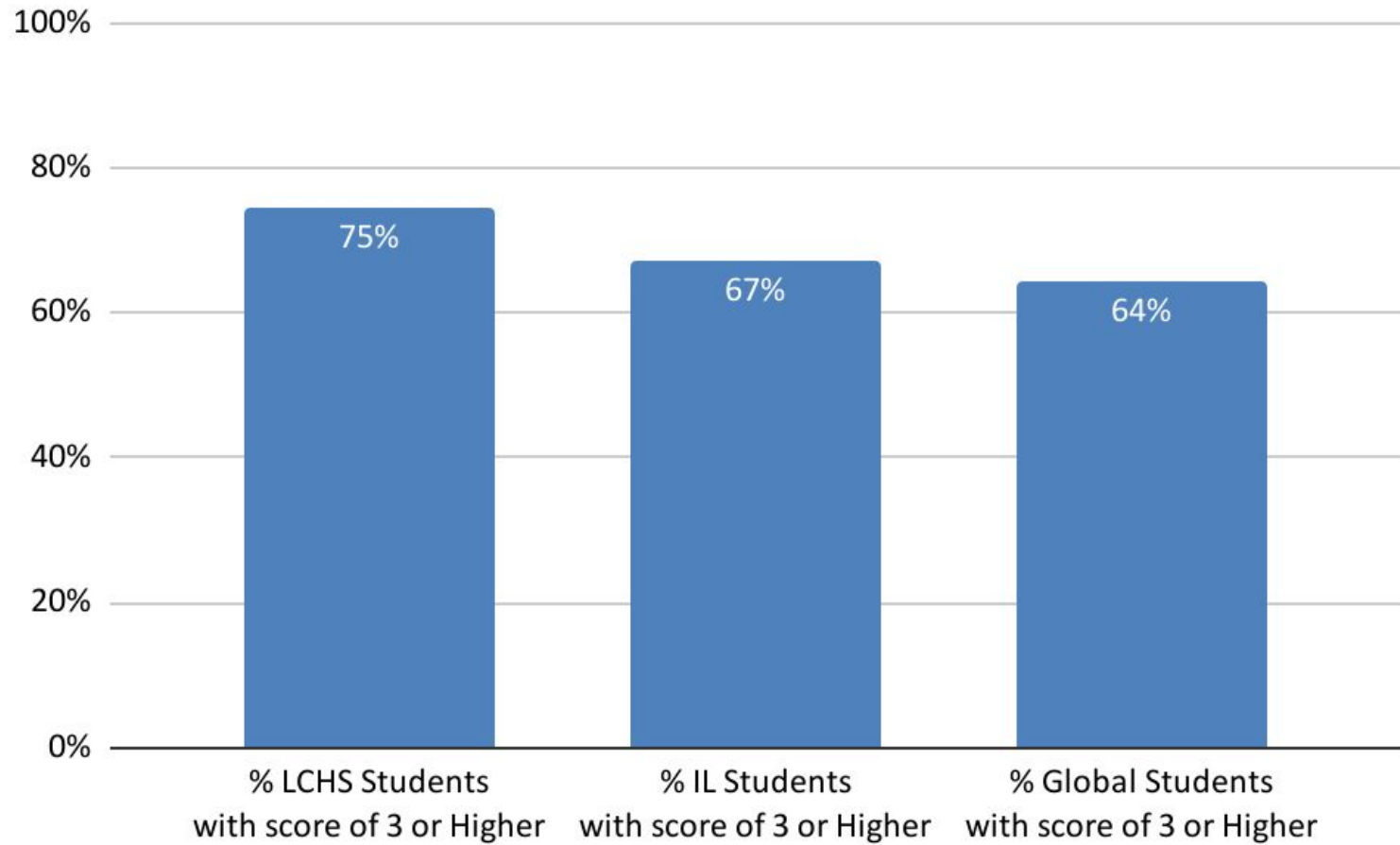
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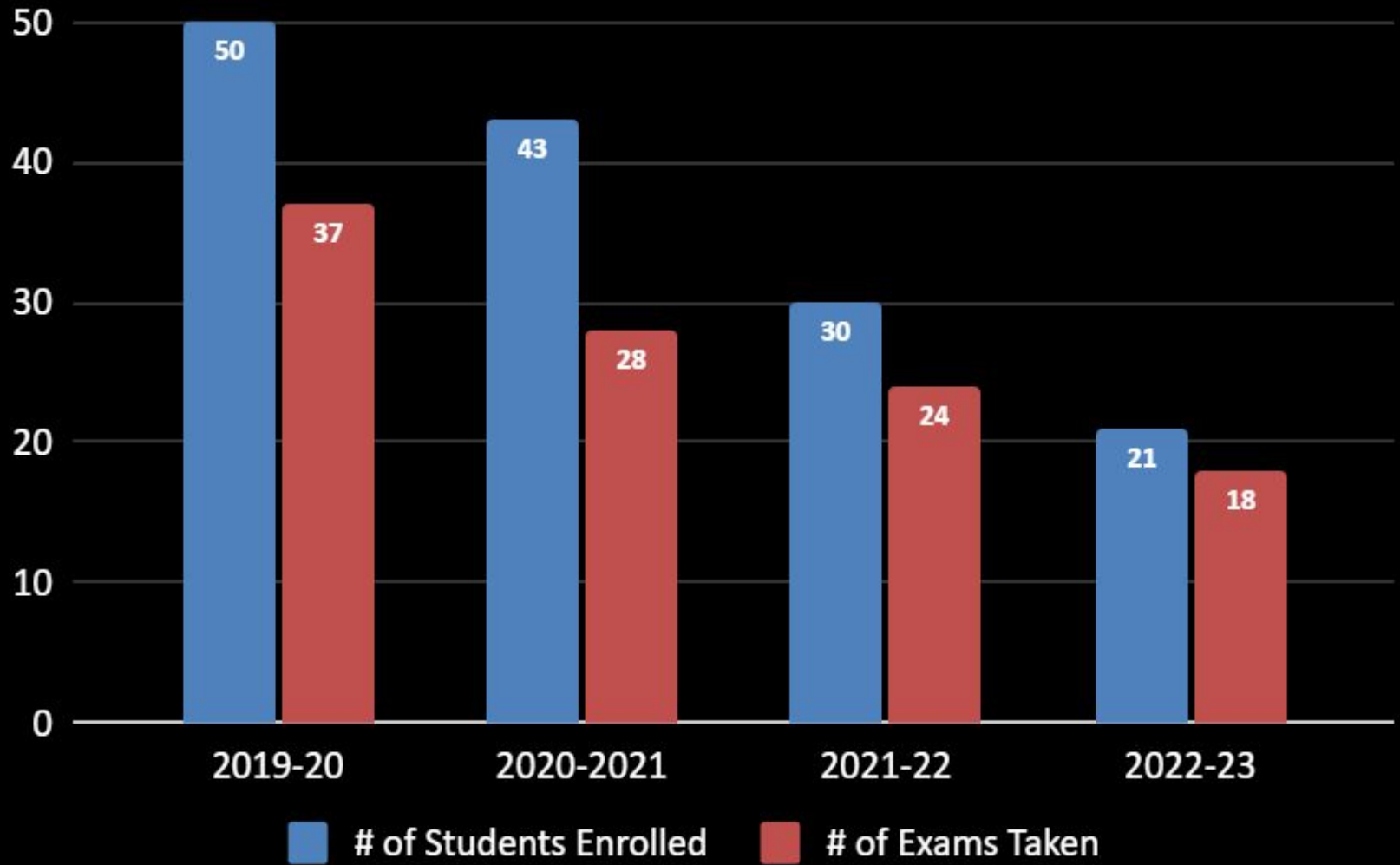
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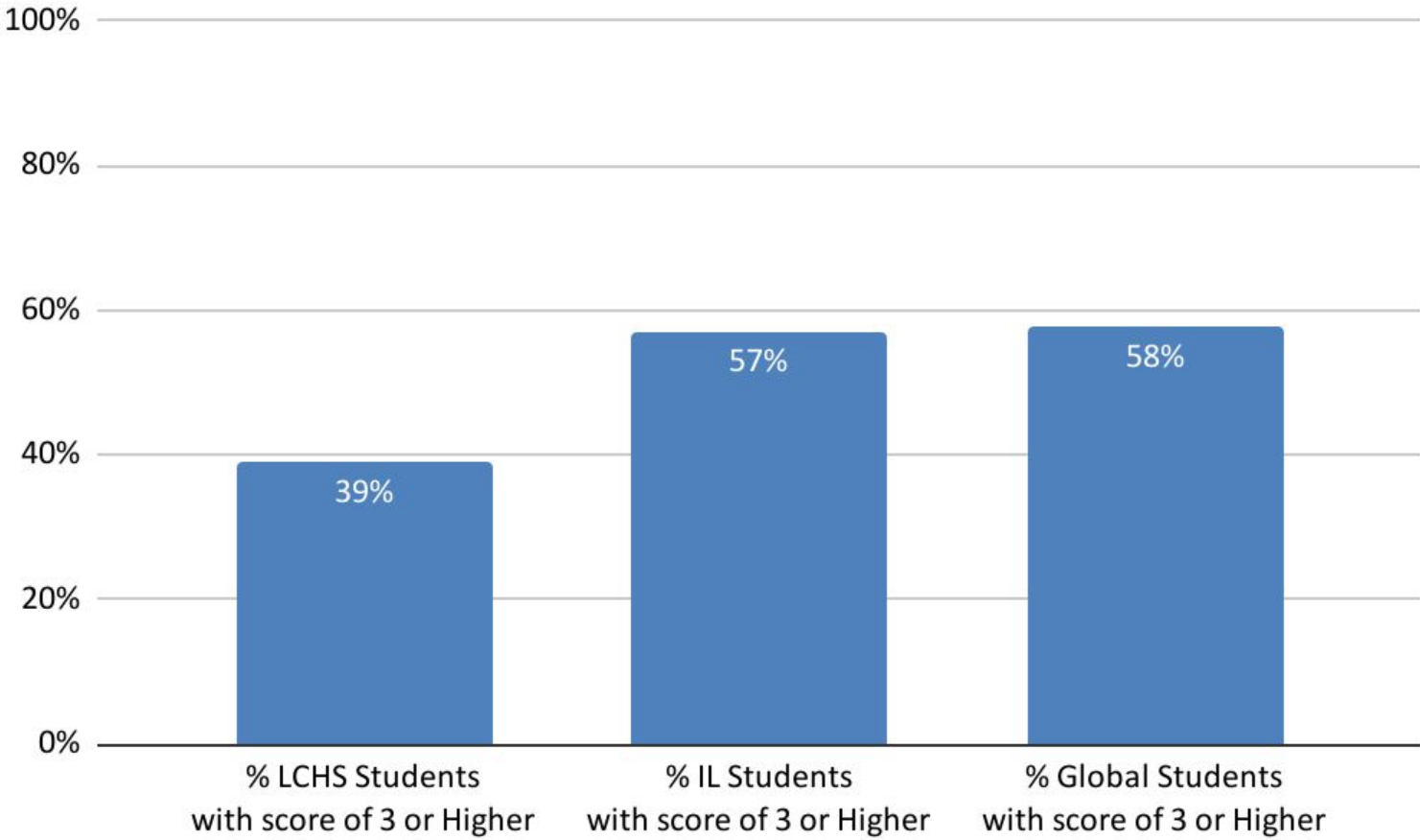
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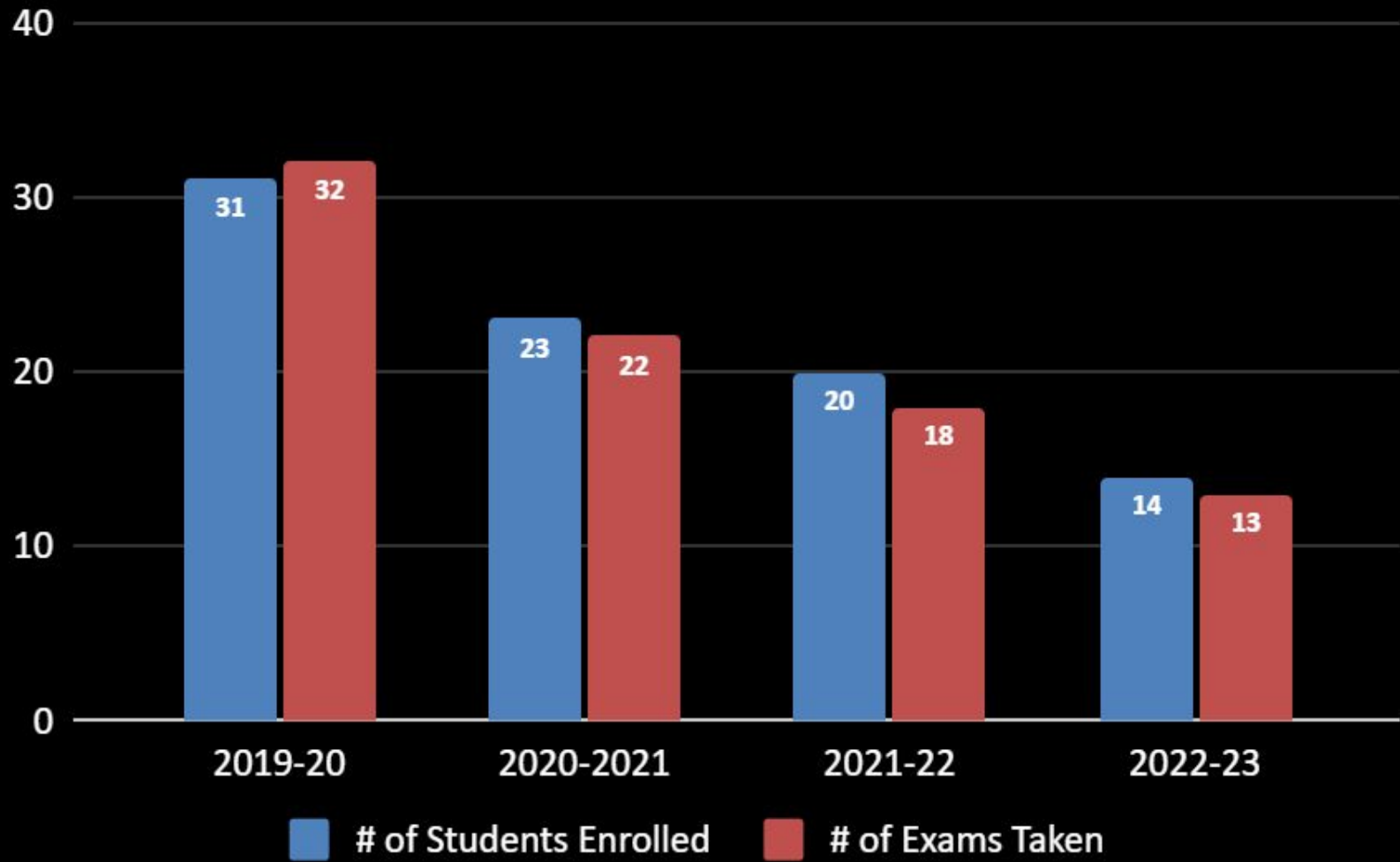
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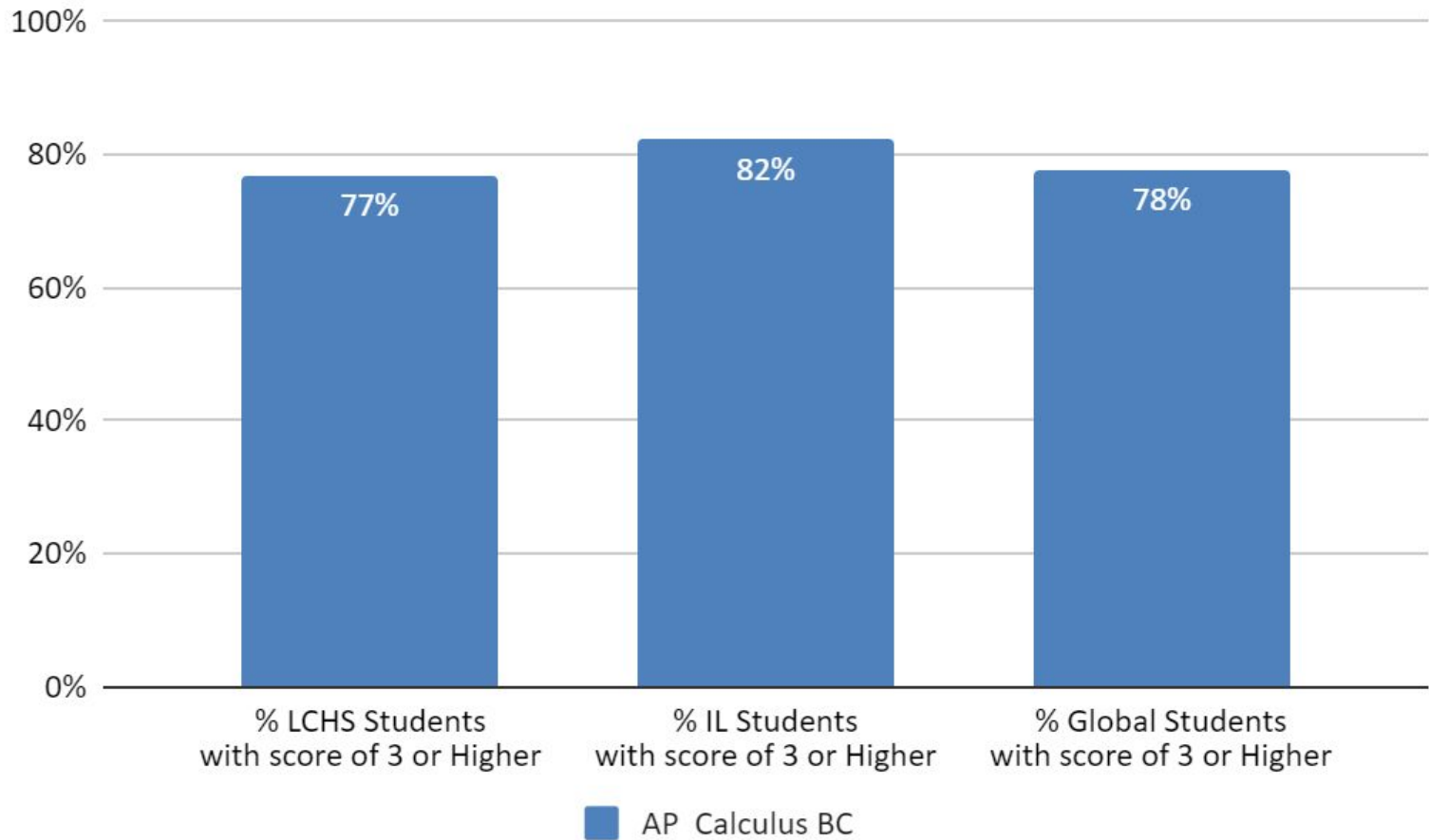
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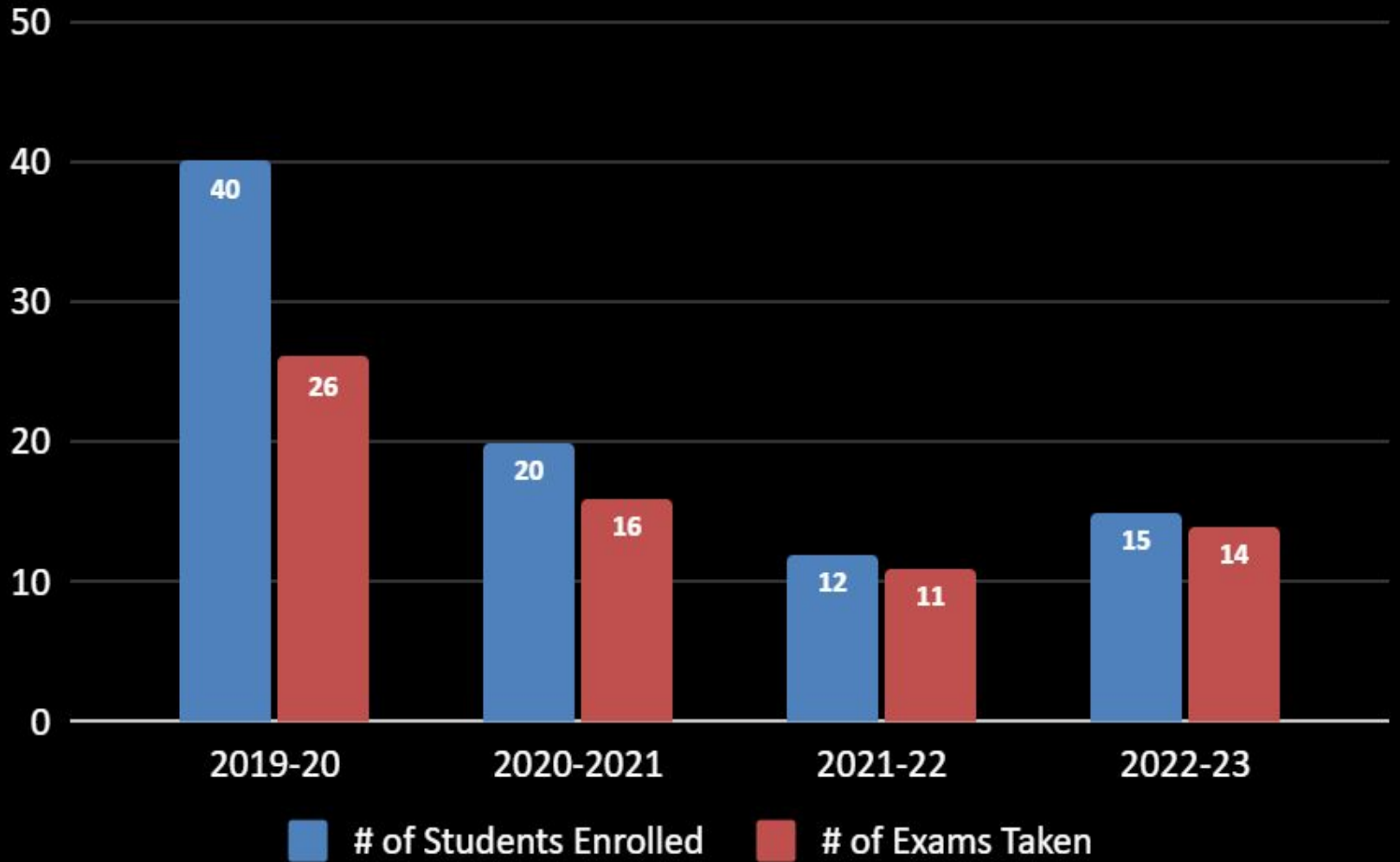
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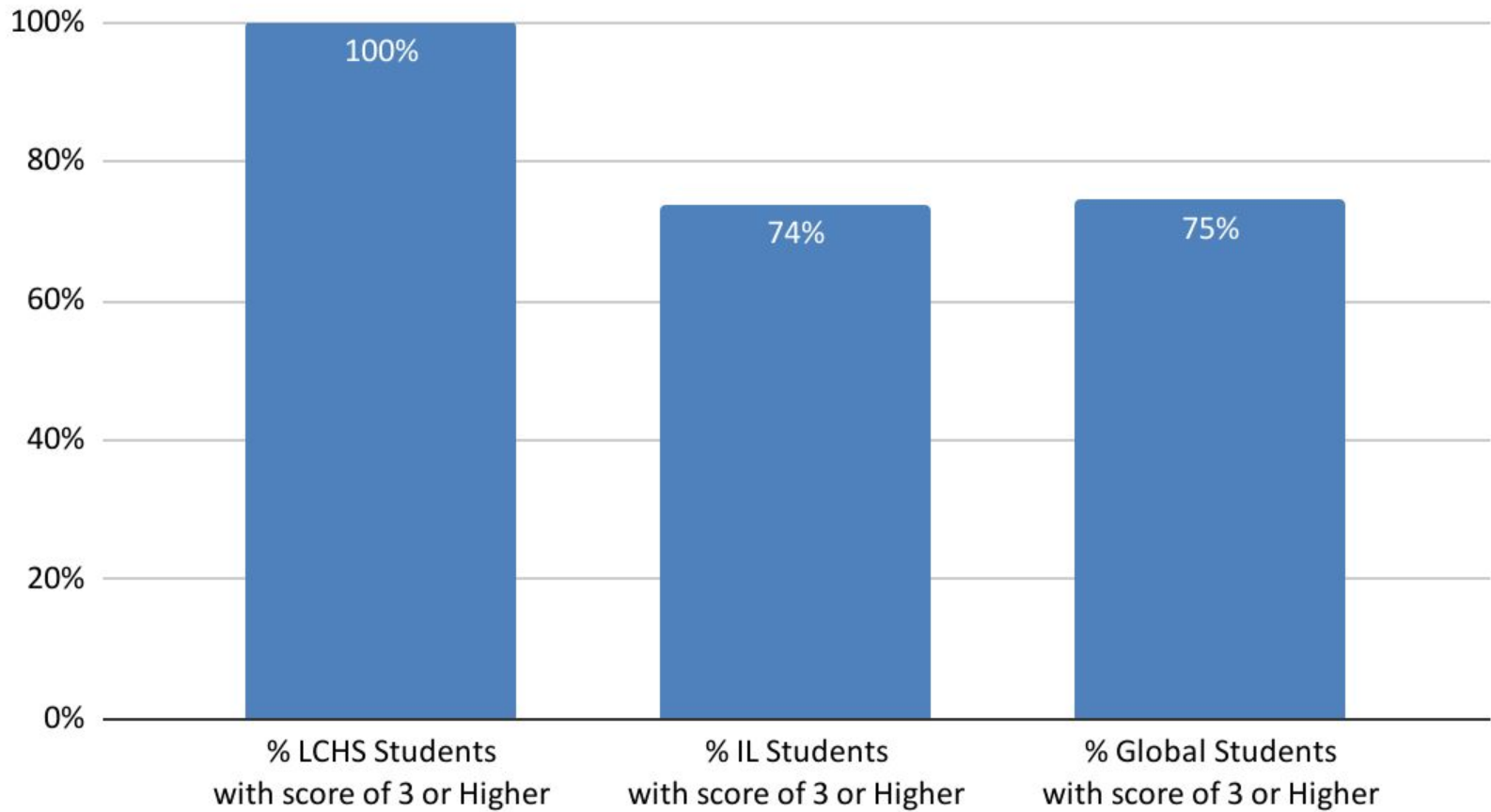
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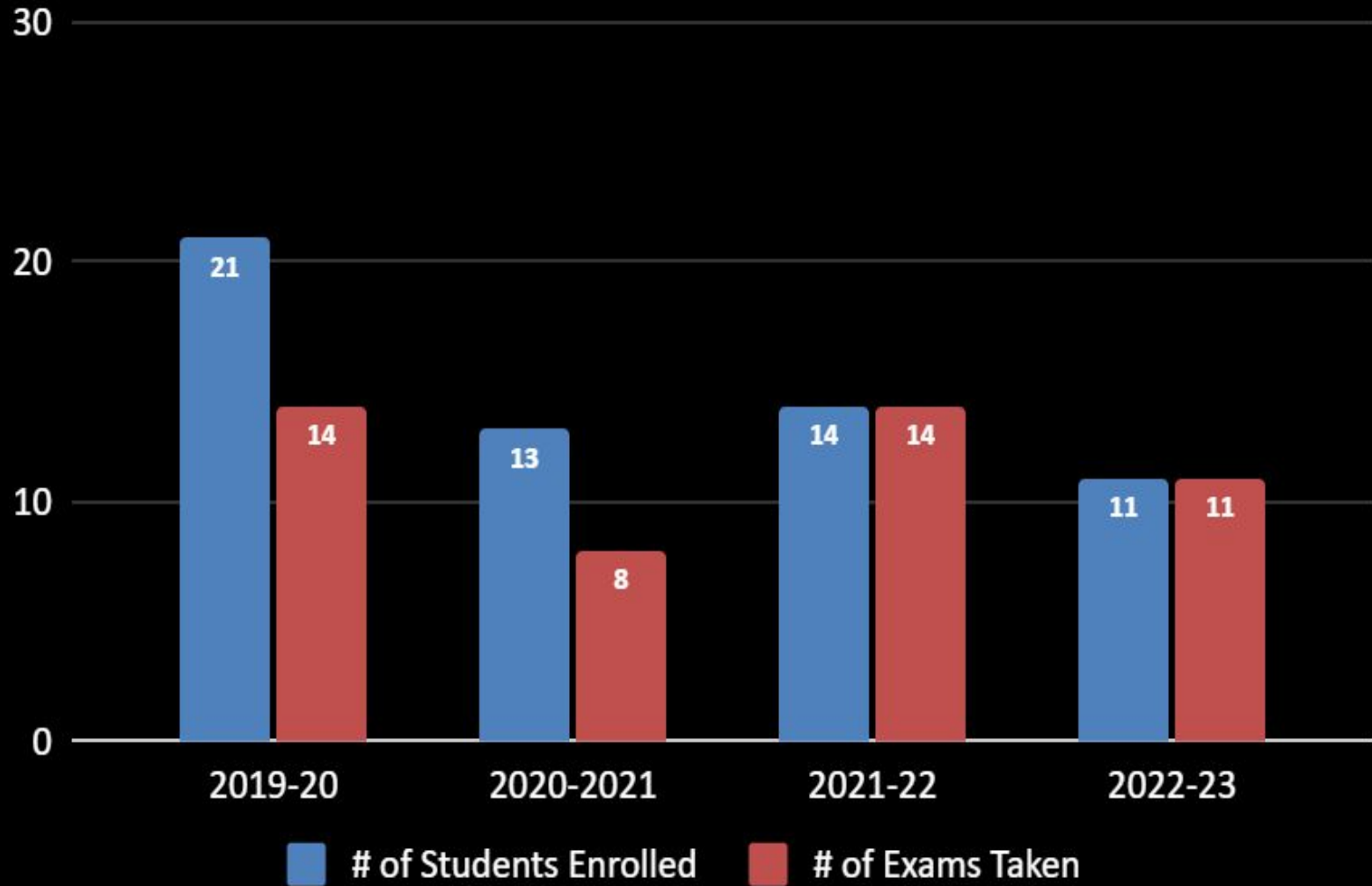
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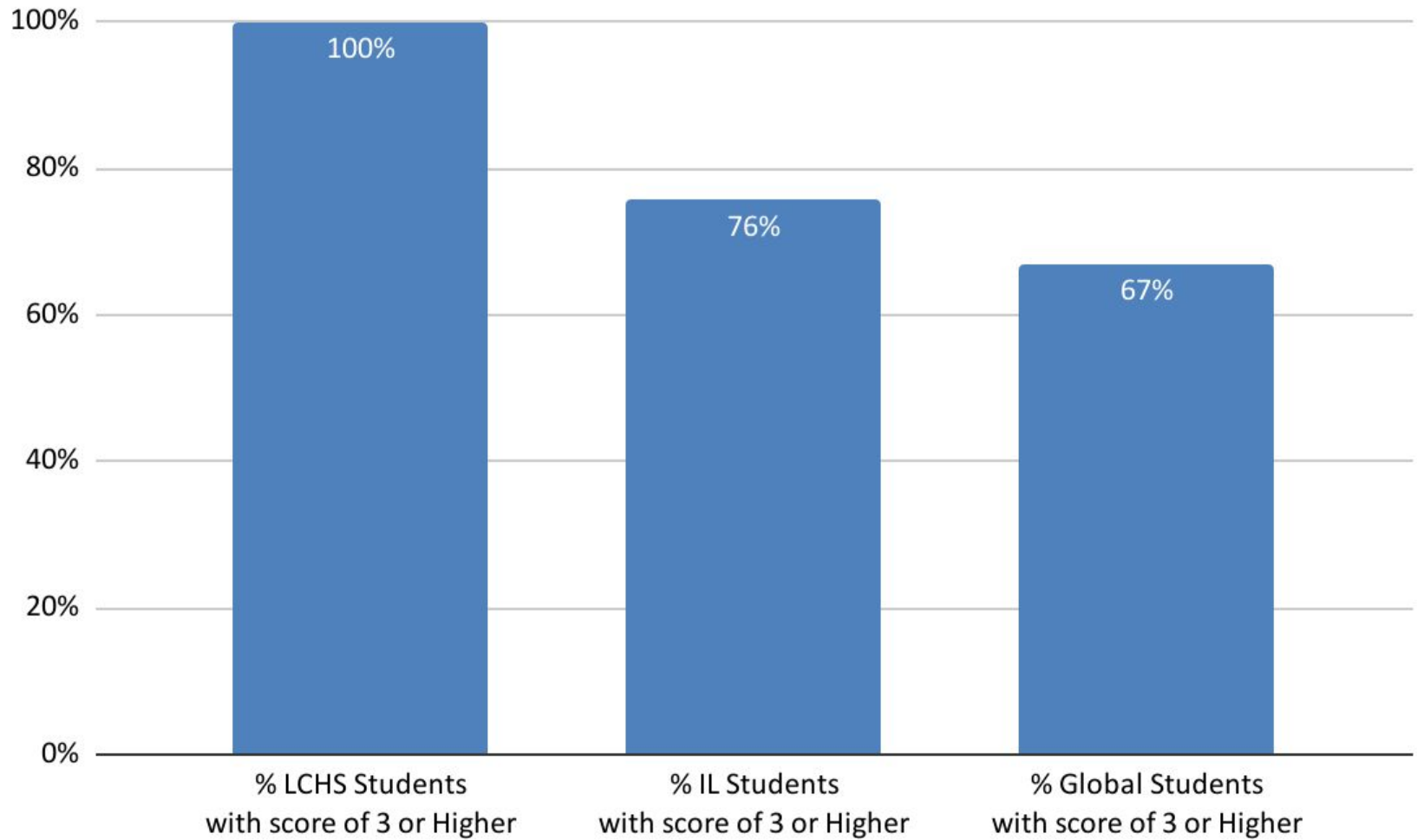
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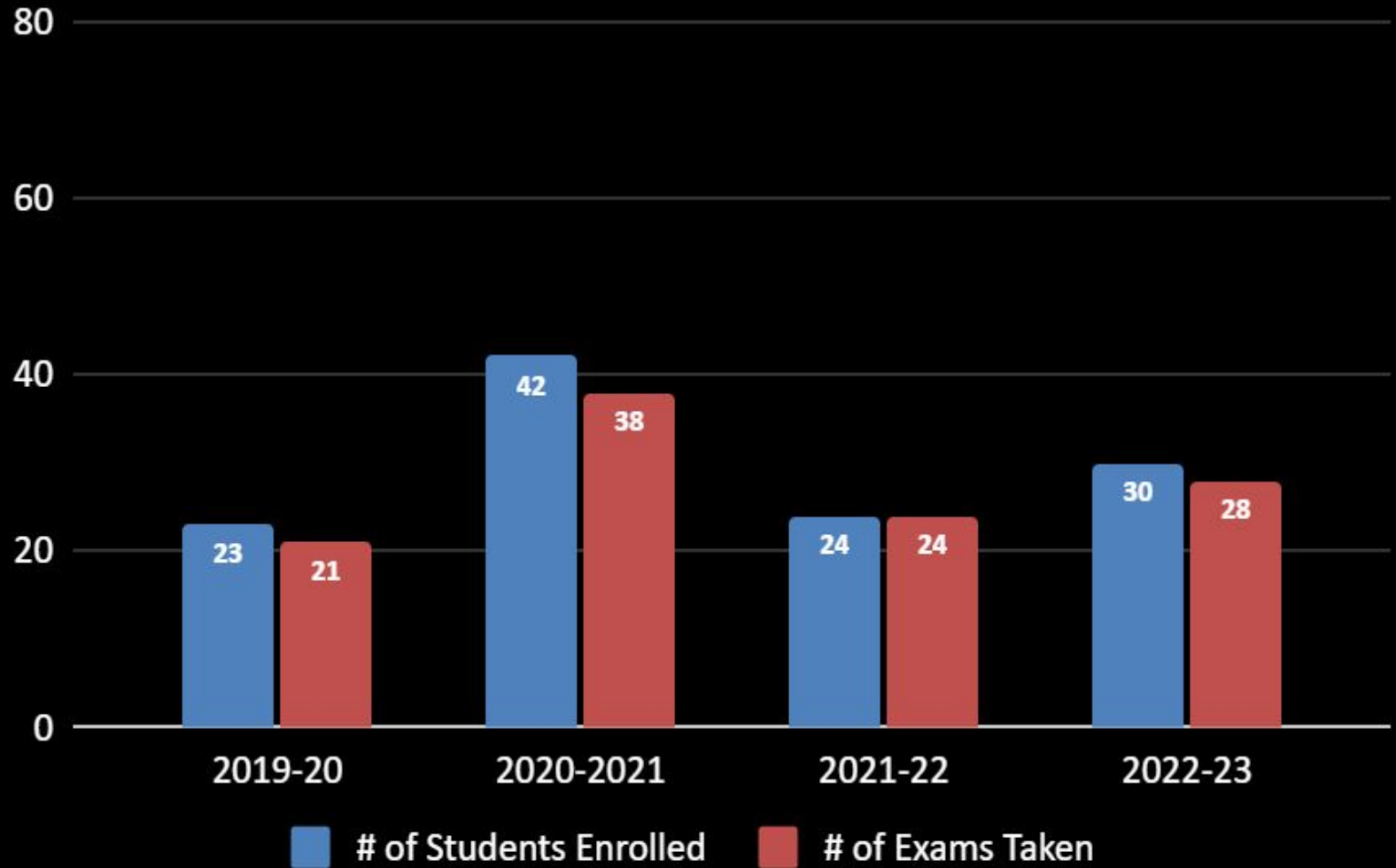
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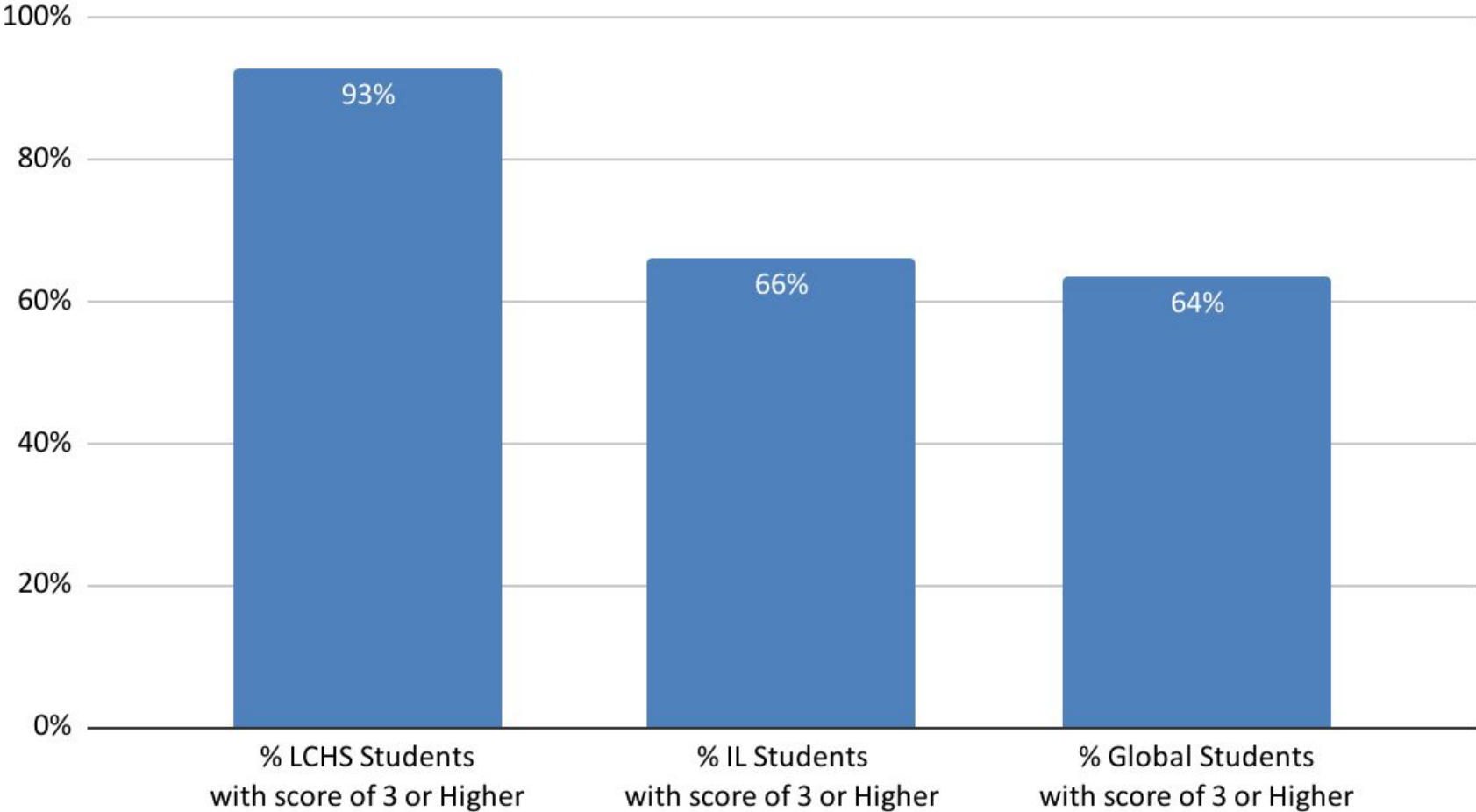
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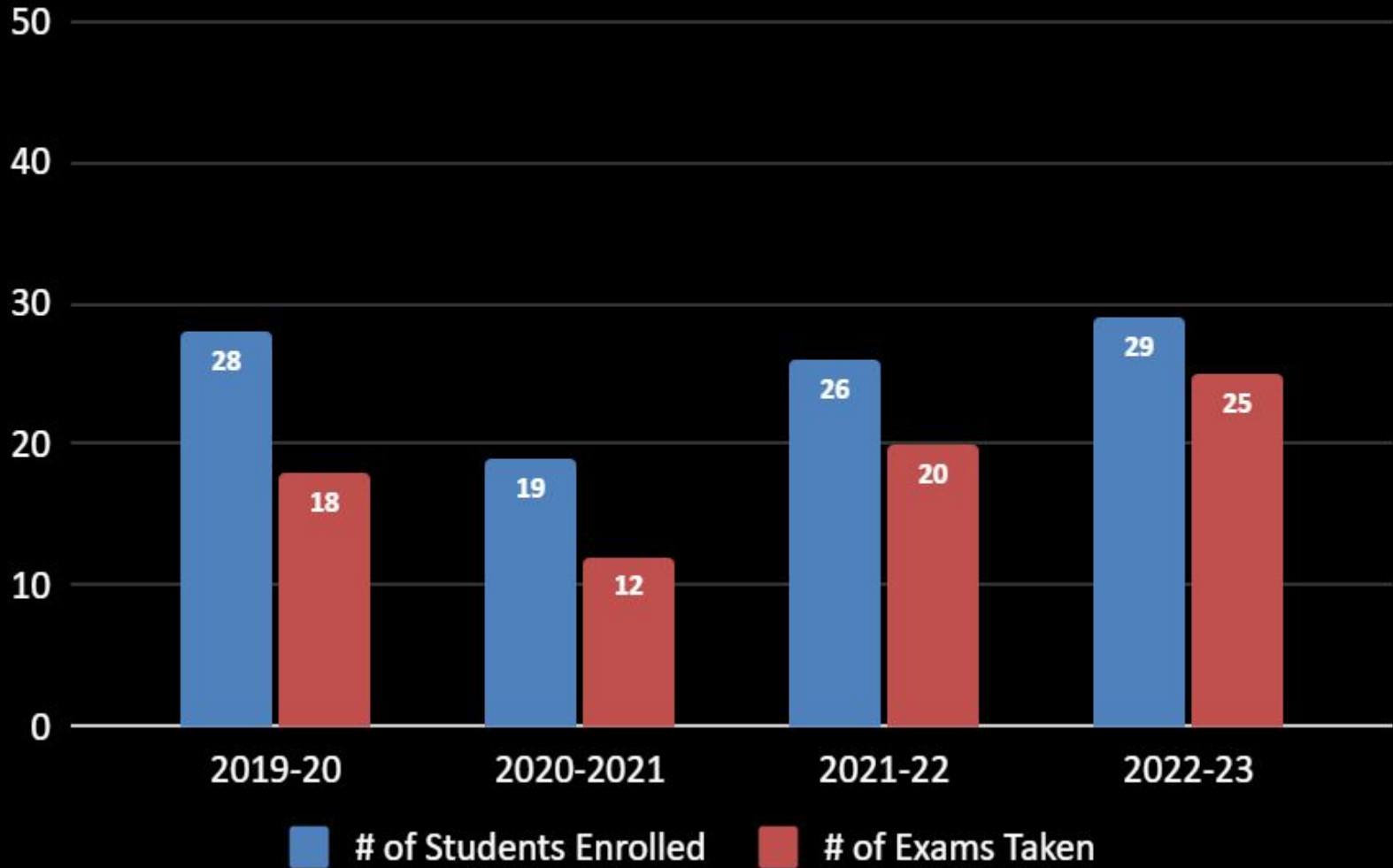
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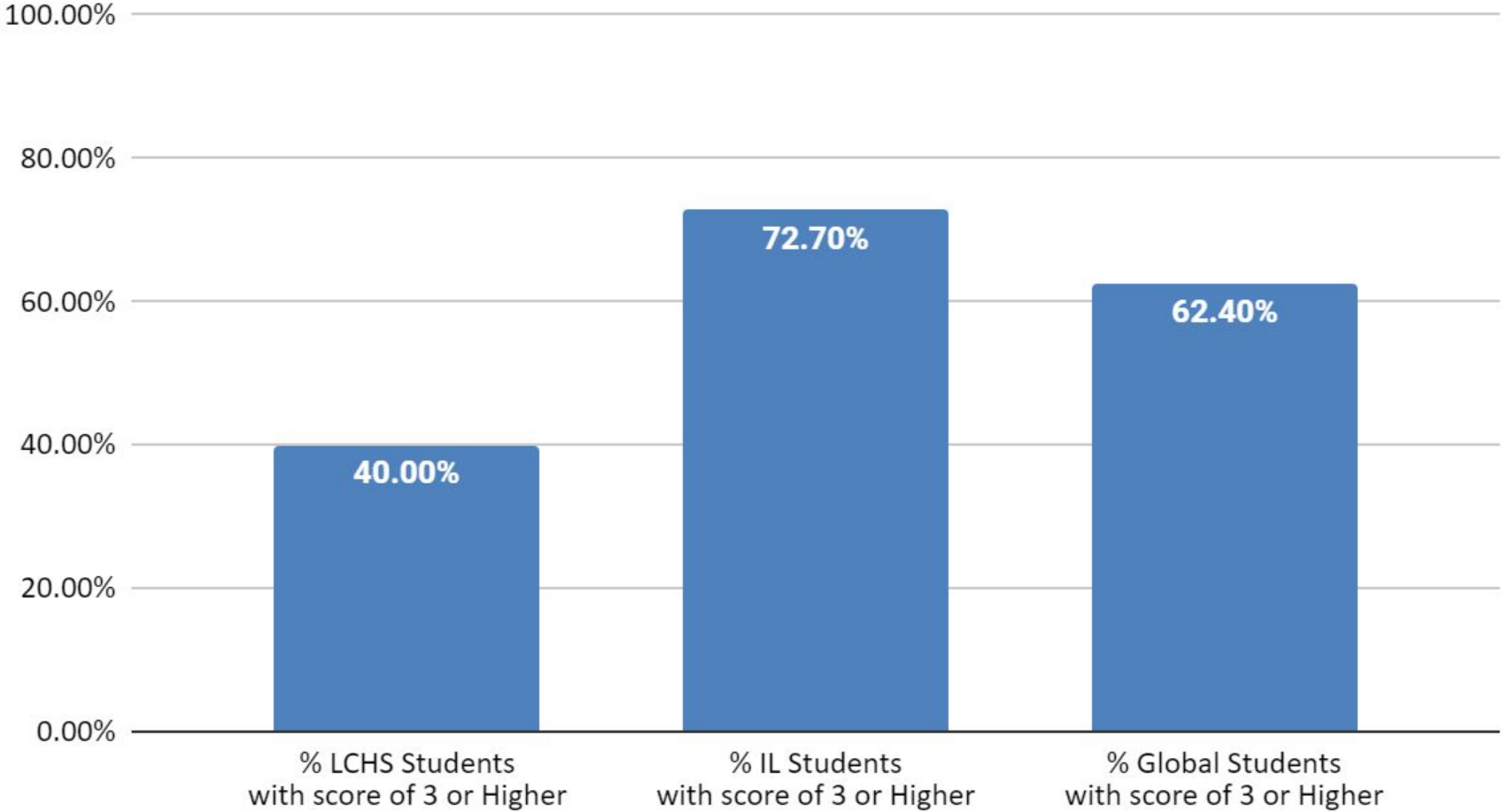
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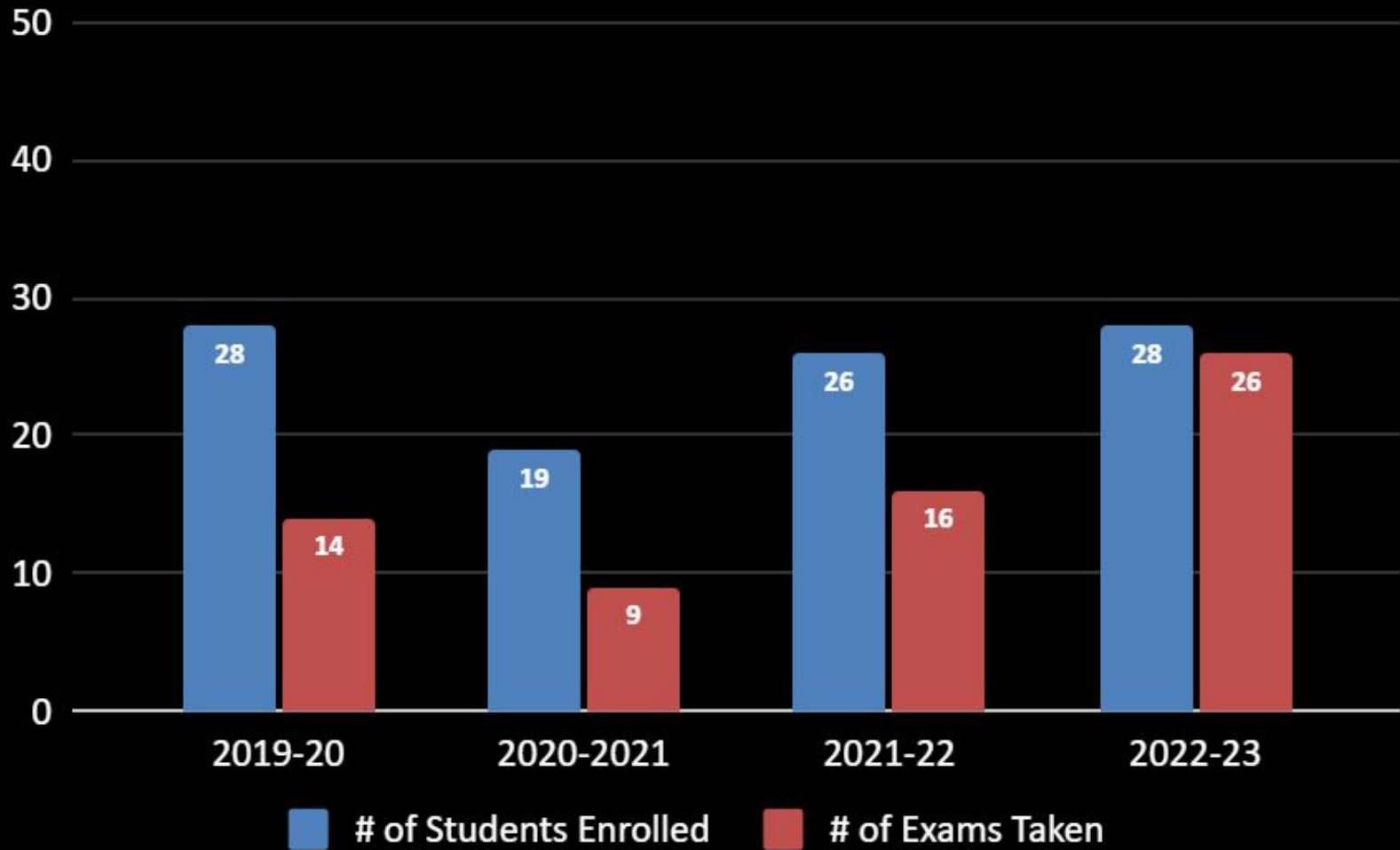
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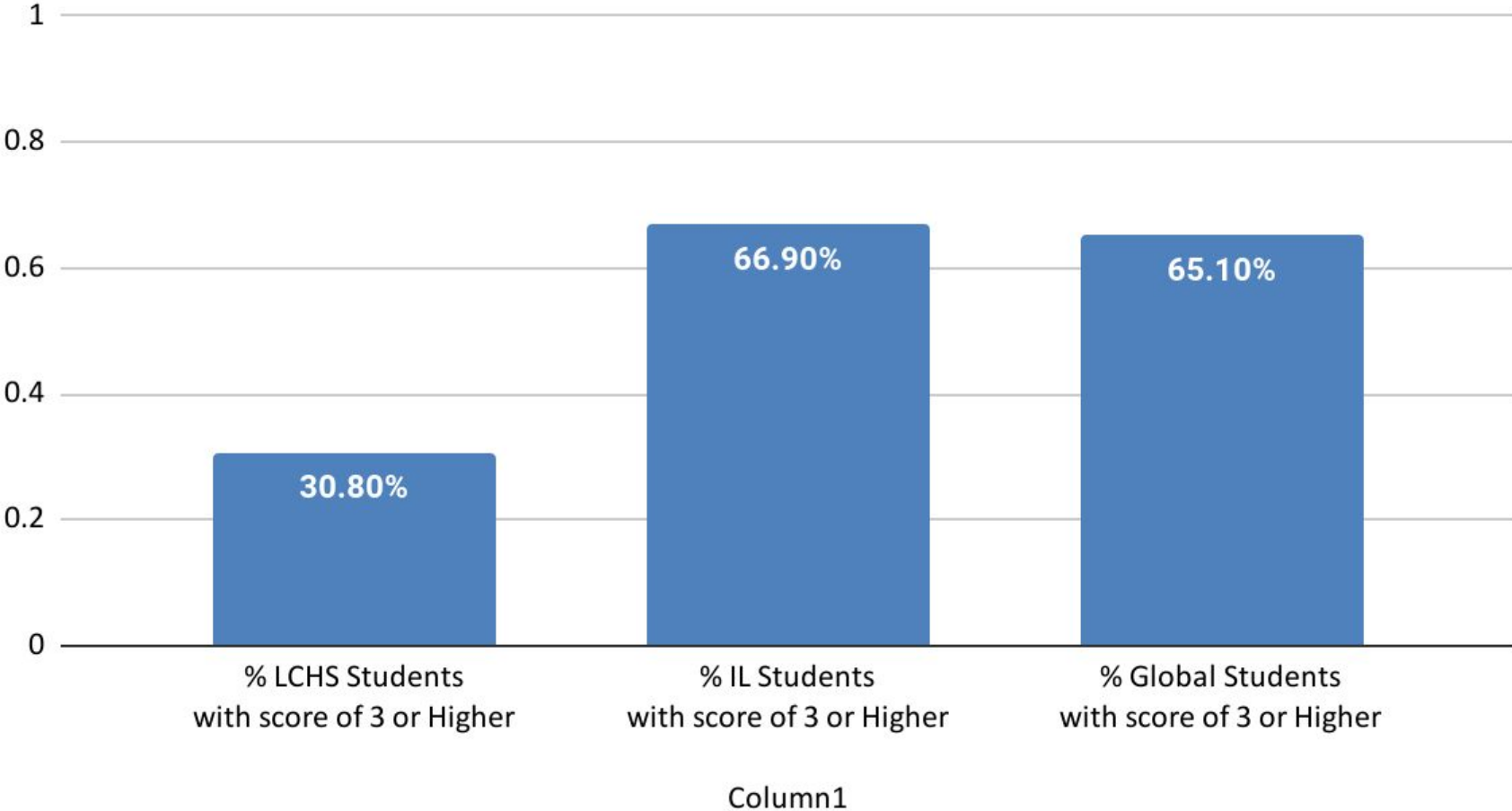
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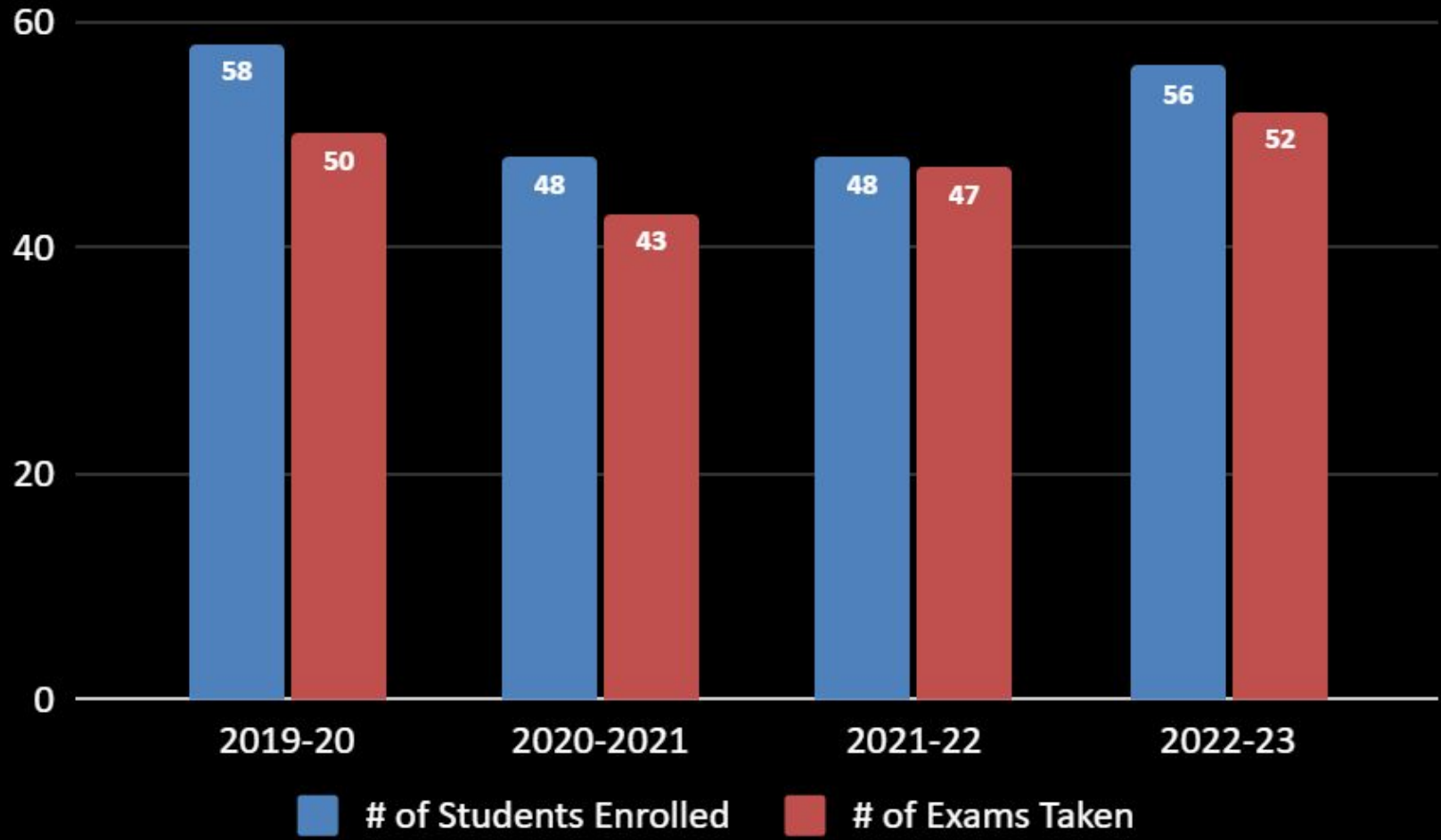
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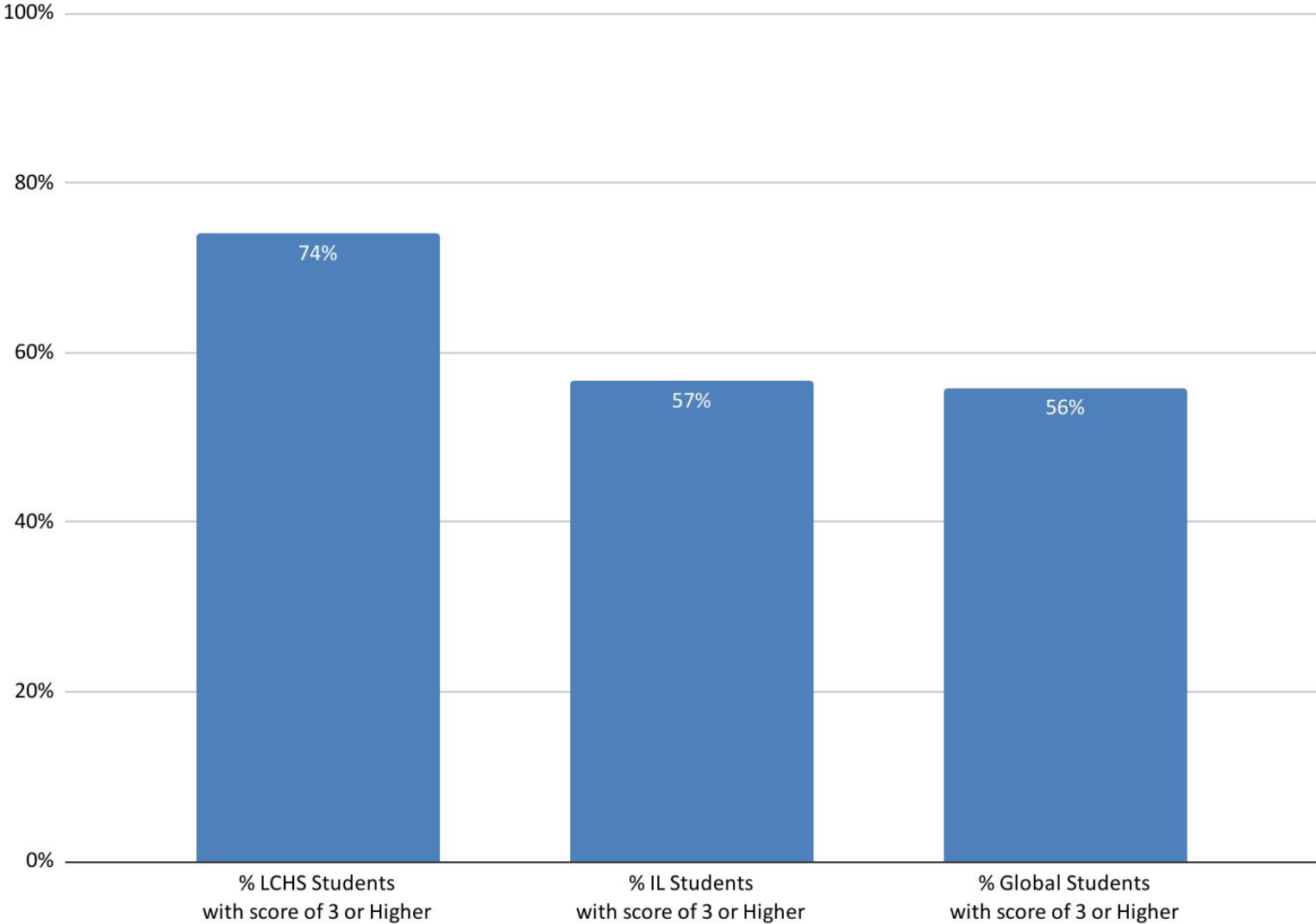
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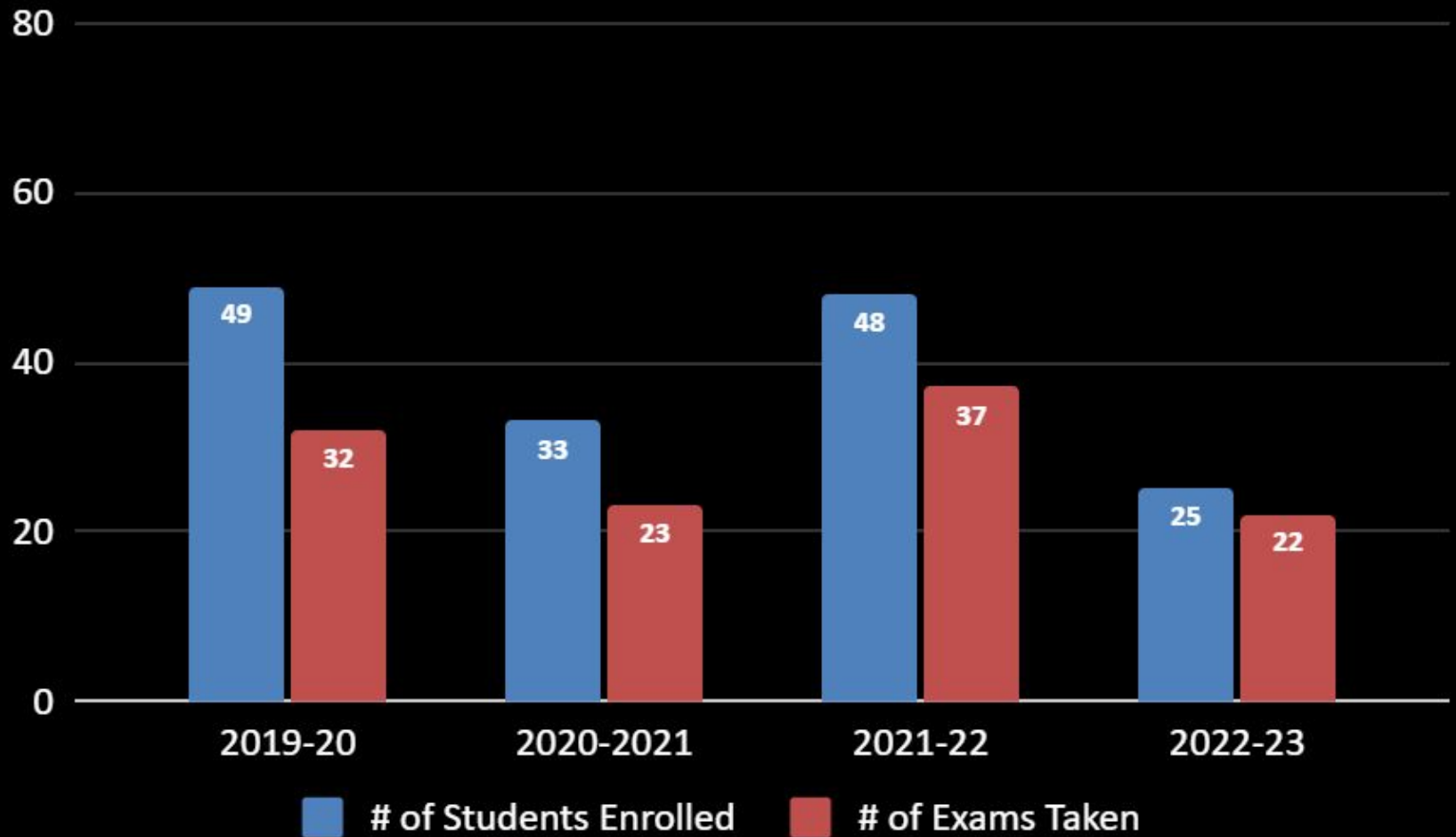
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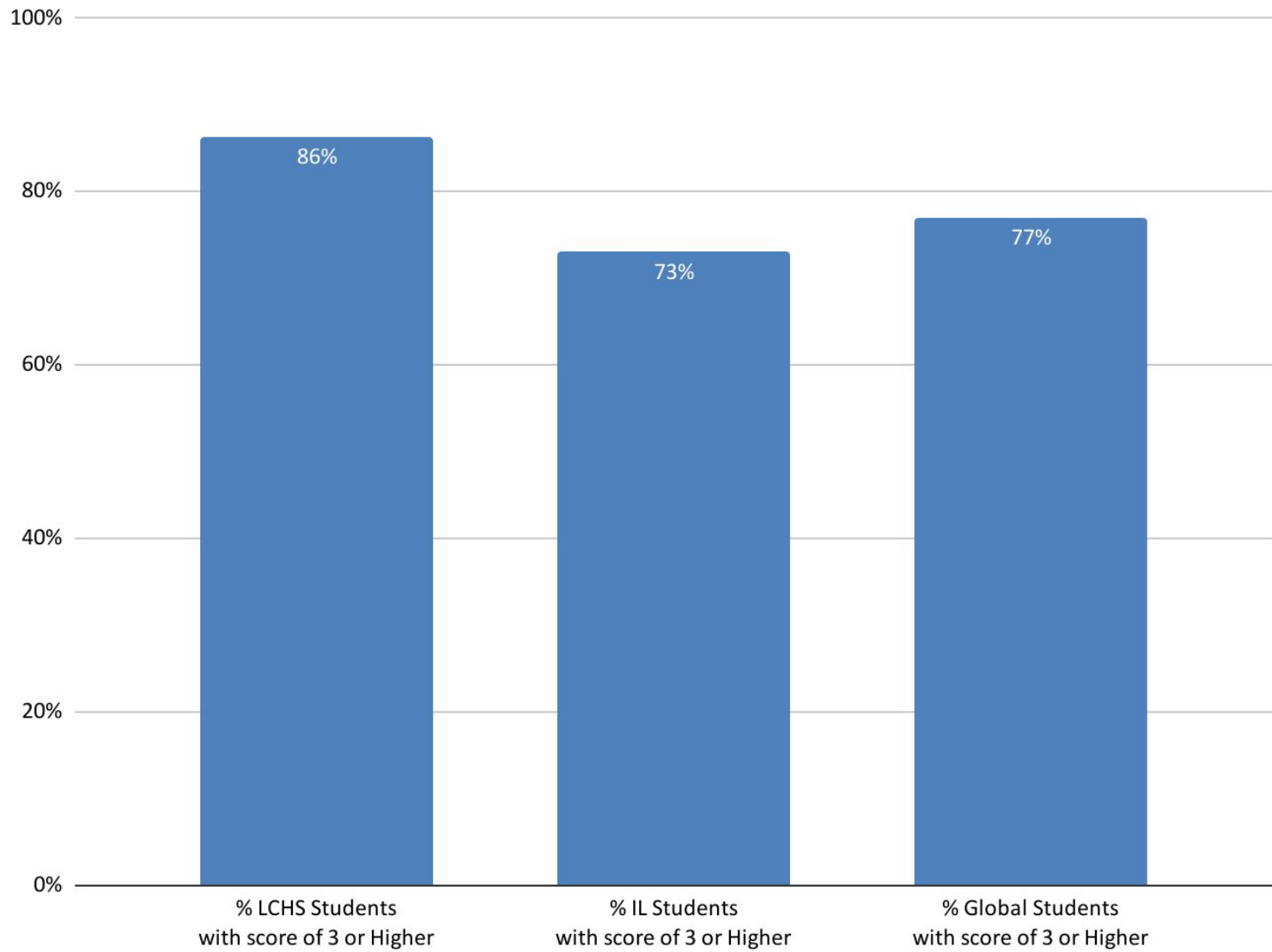
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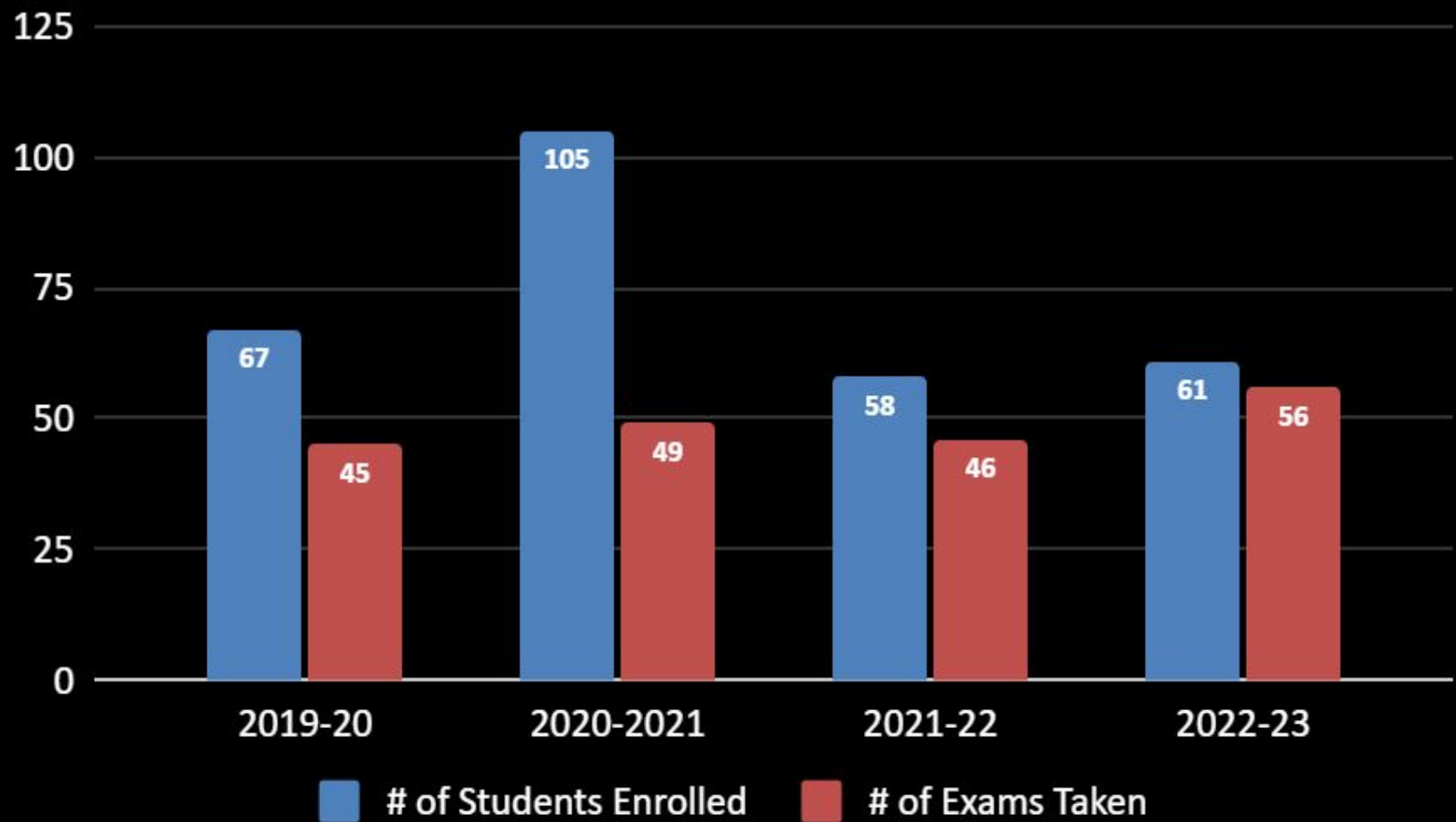
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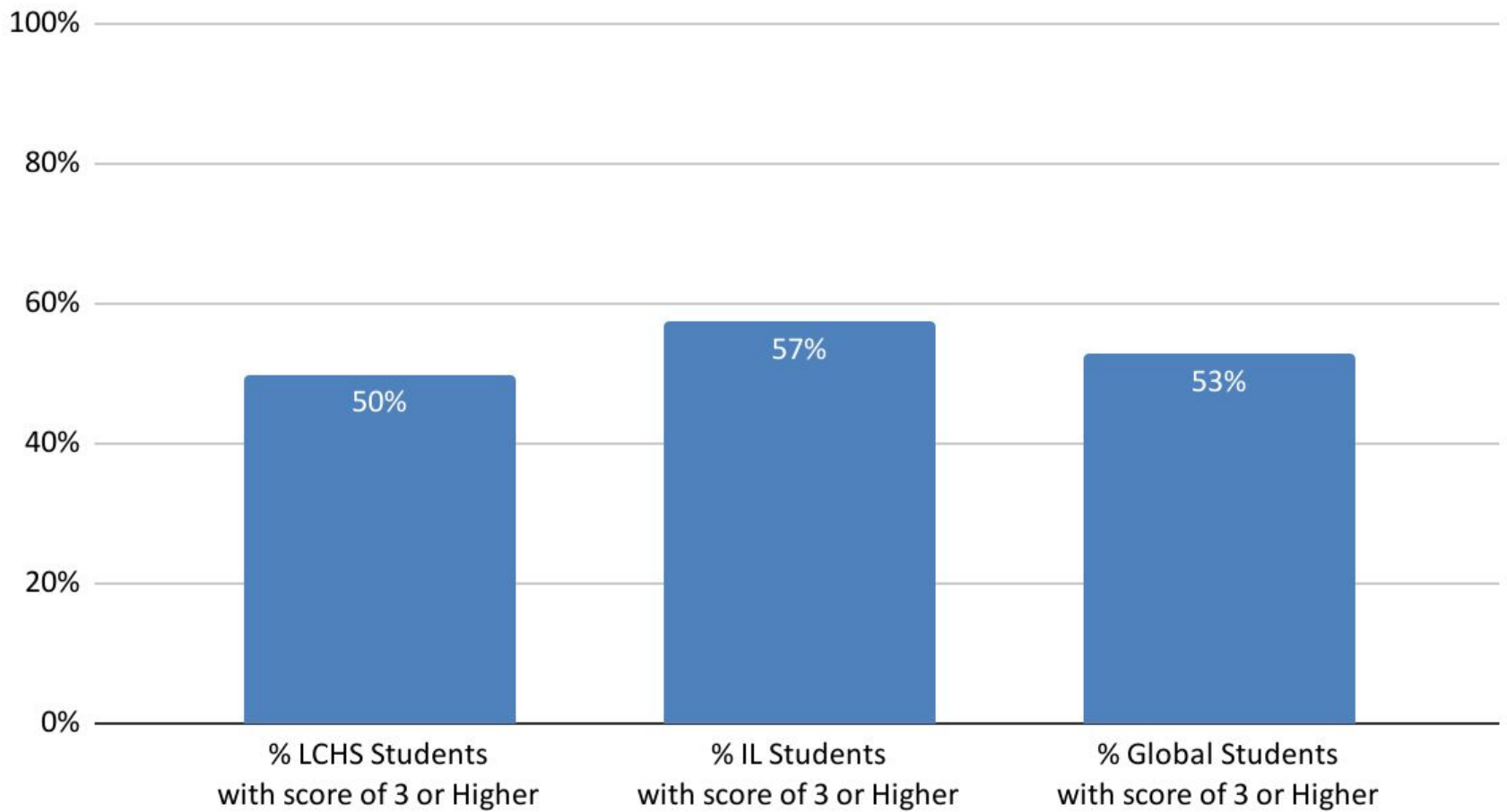
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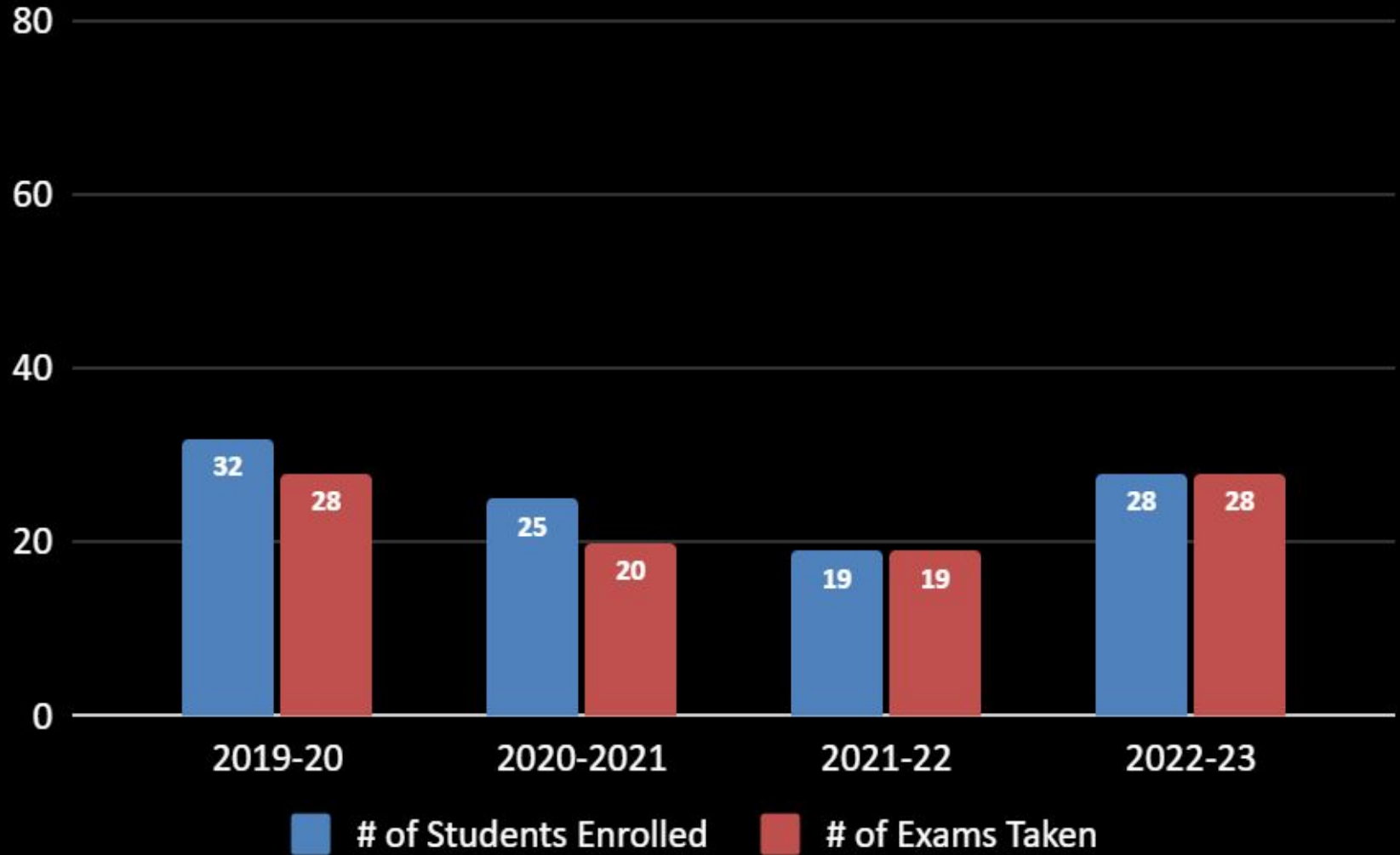
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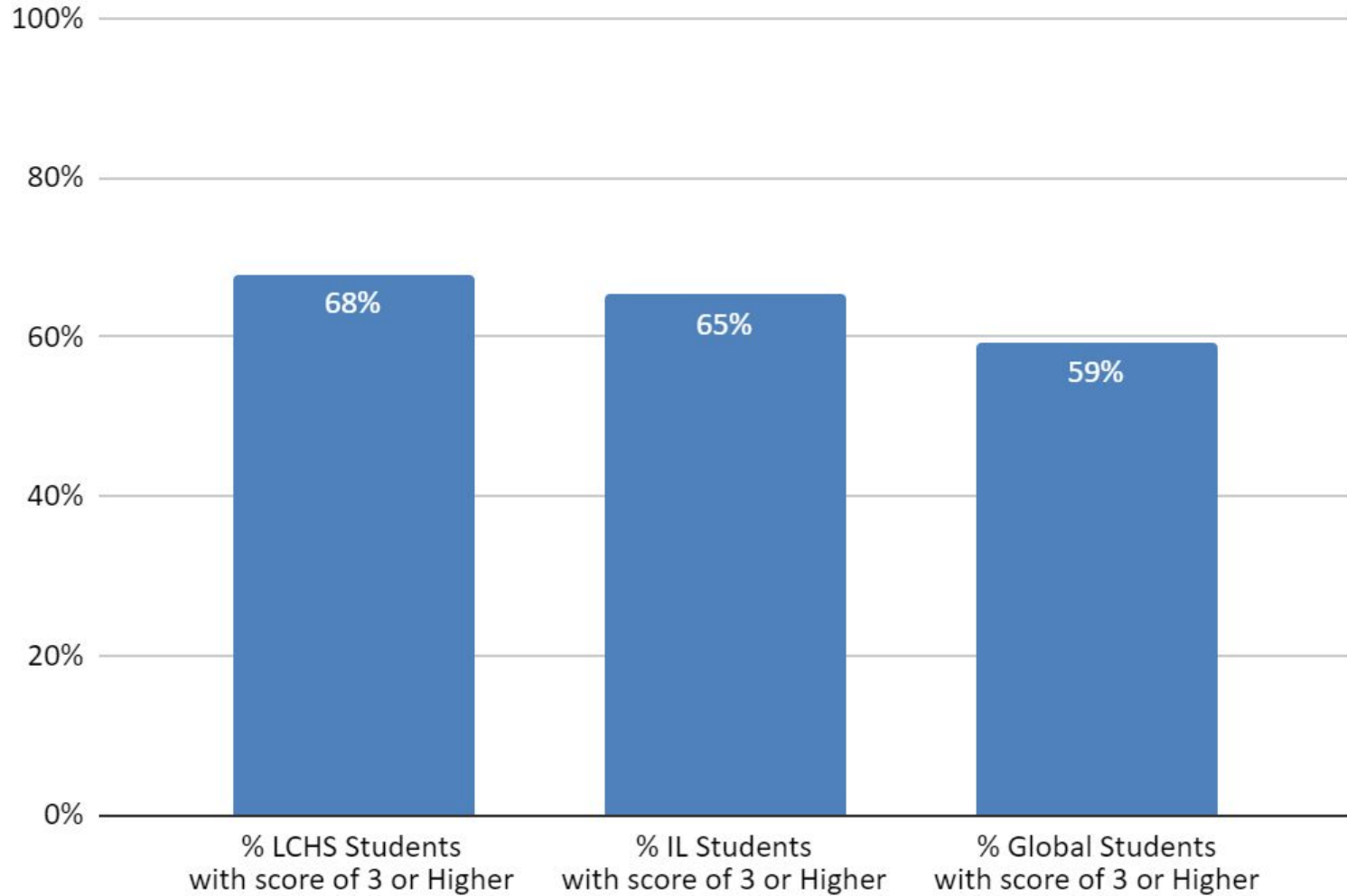
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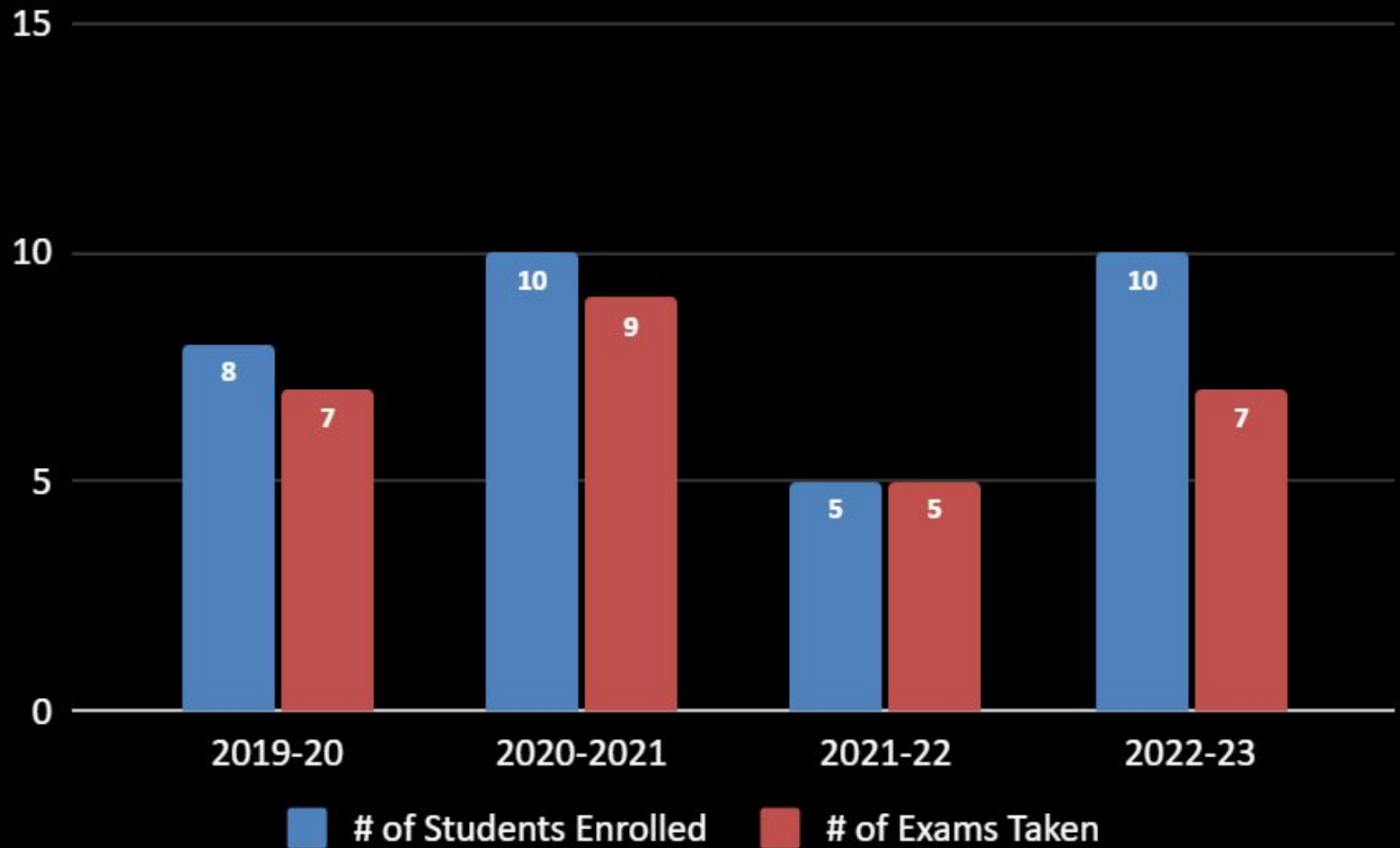
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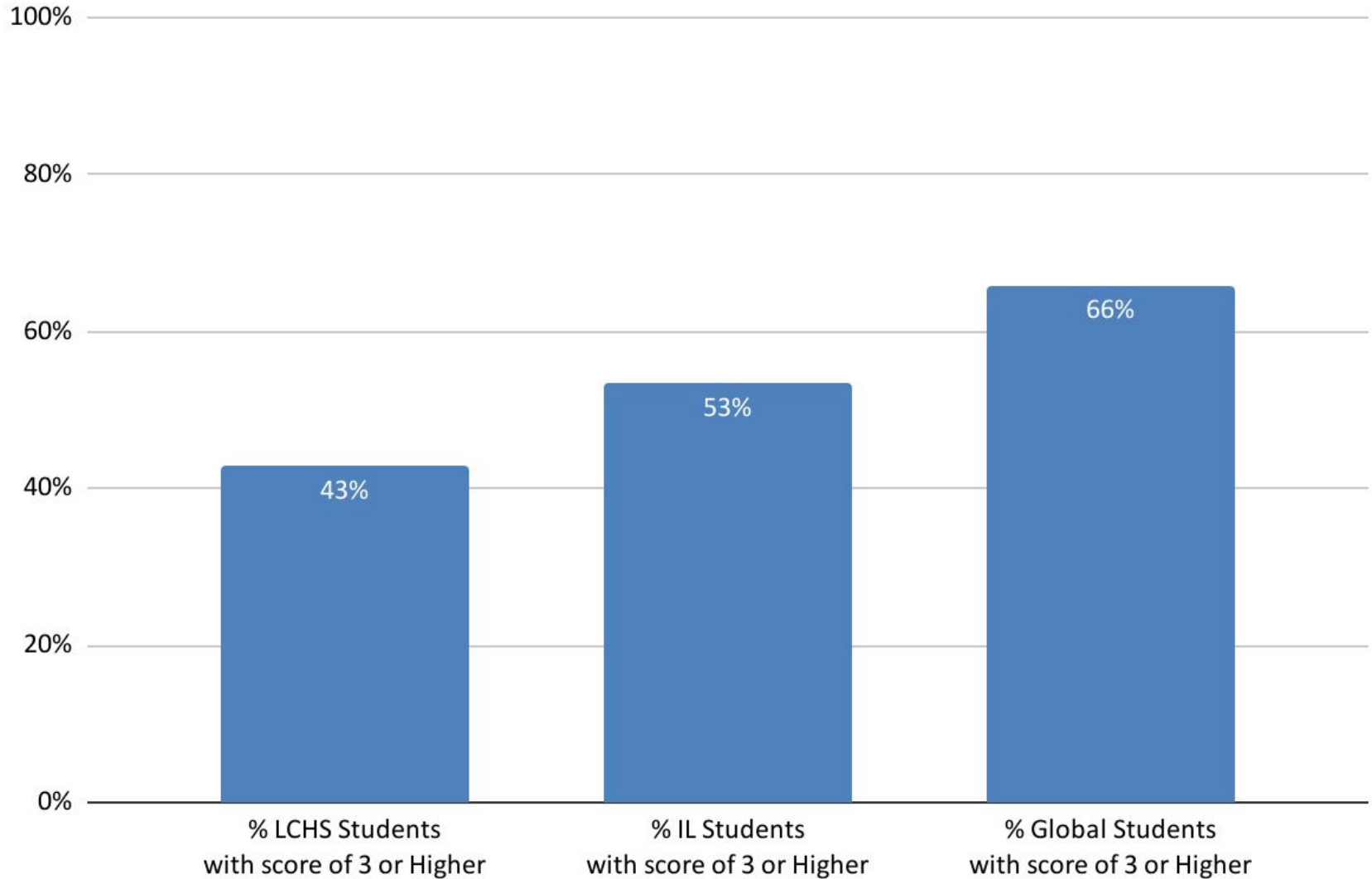
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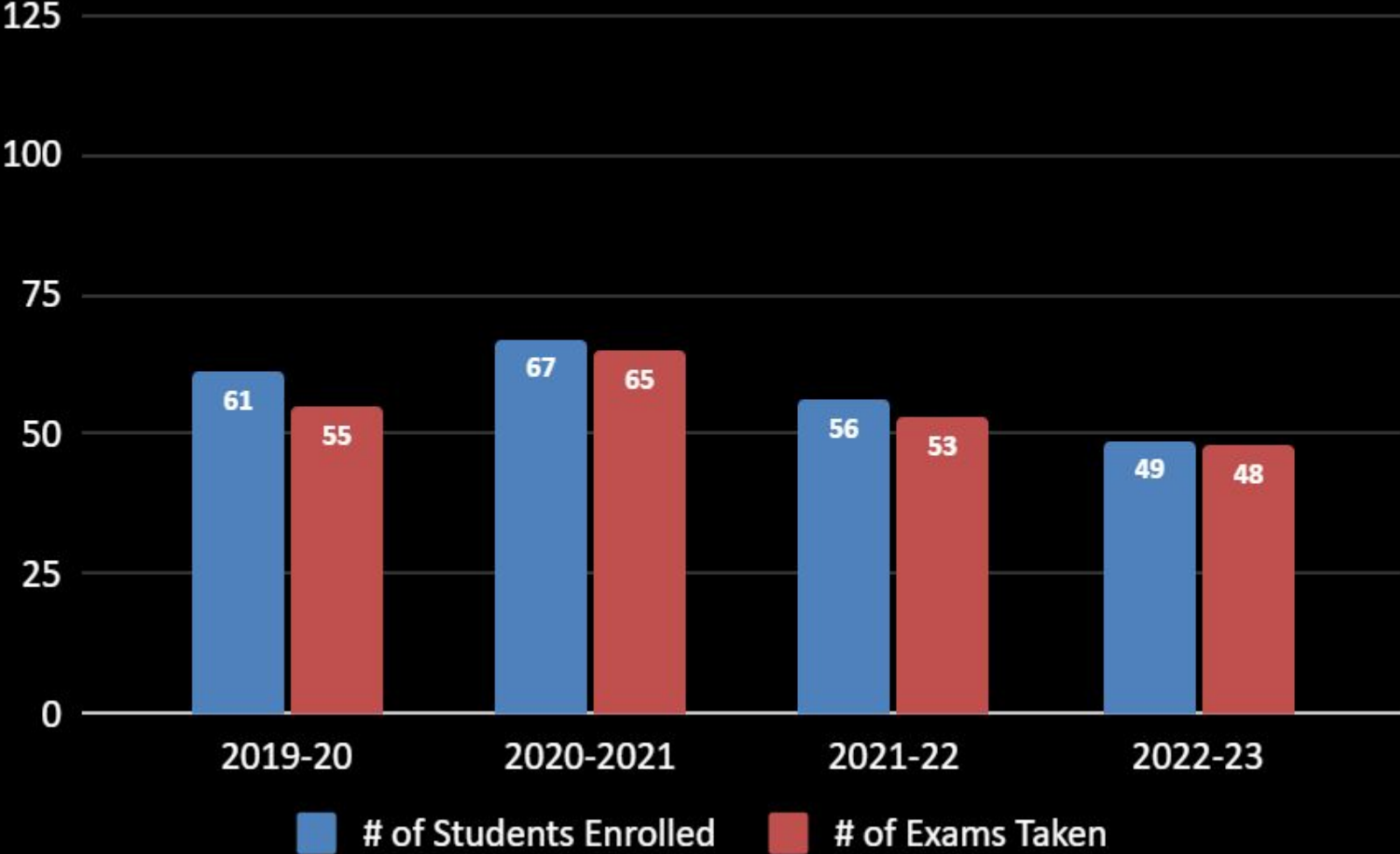
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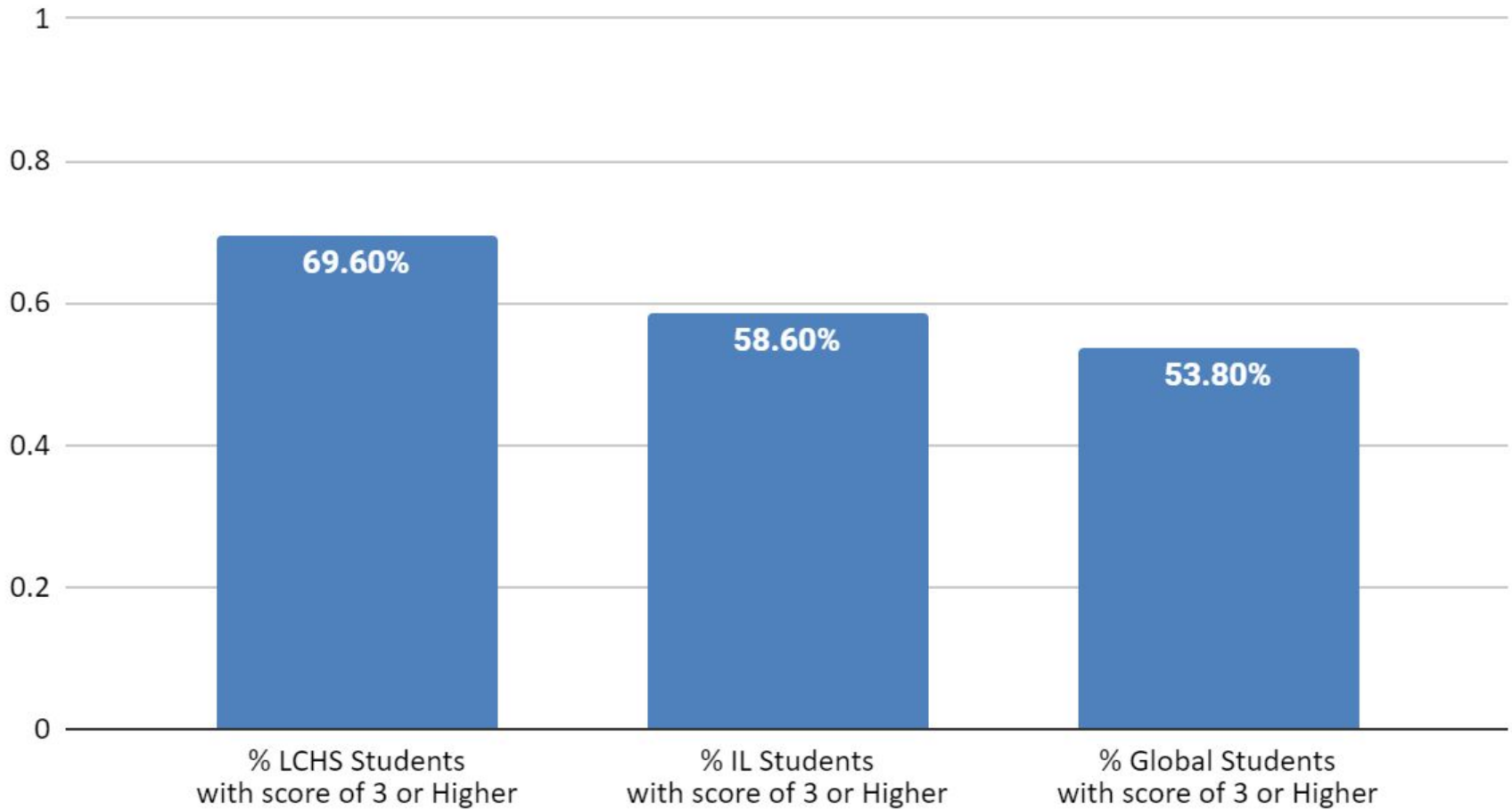
AP German Language & Culture



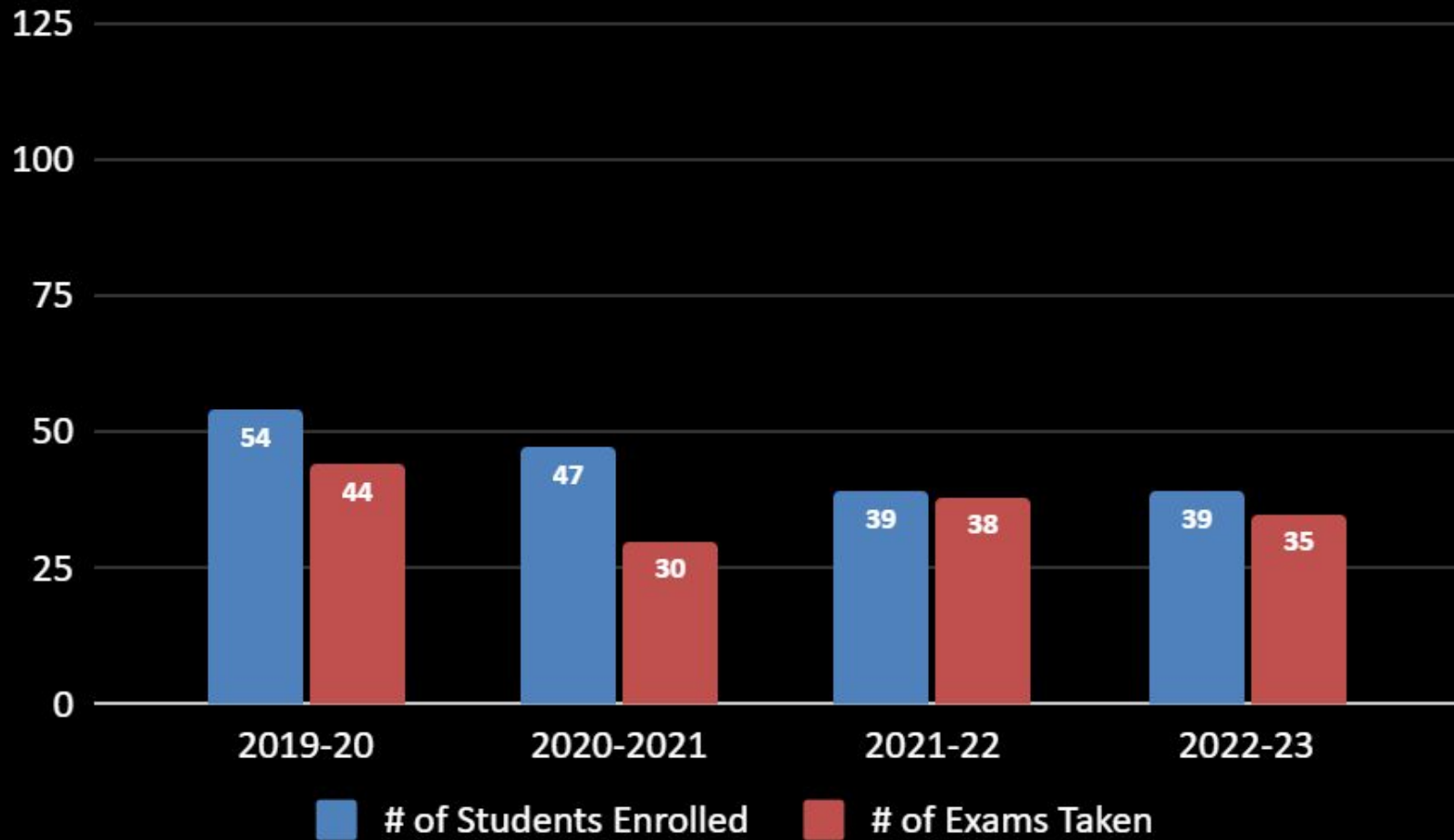
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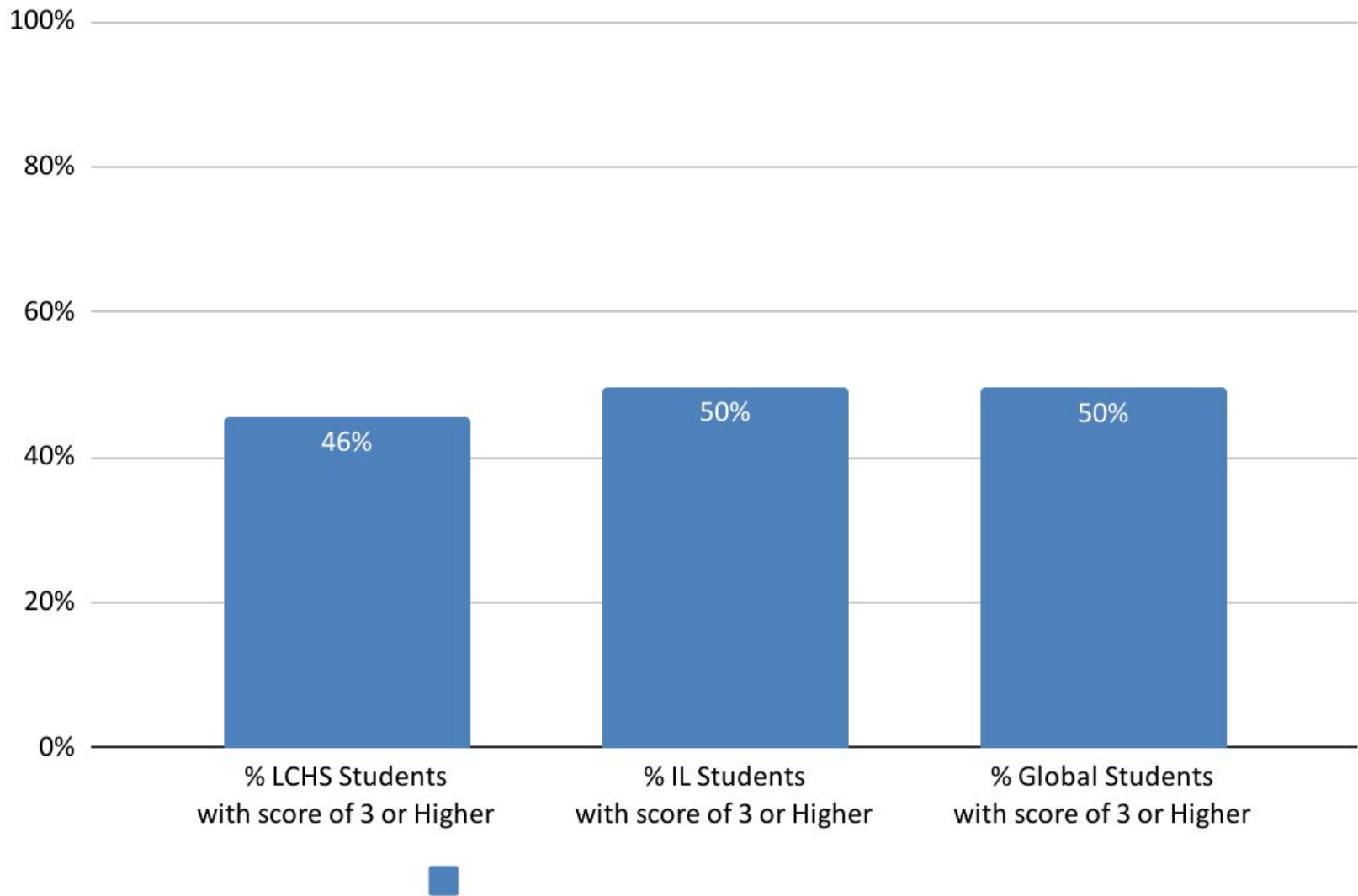
AP Human Geography



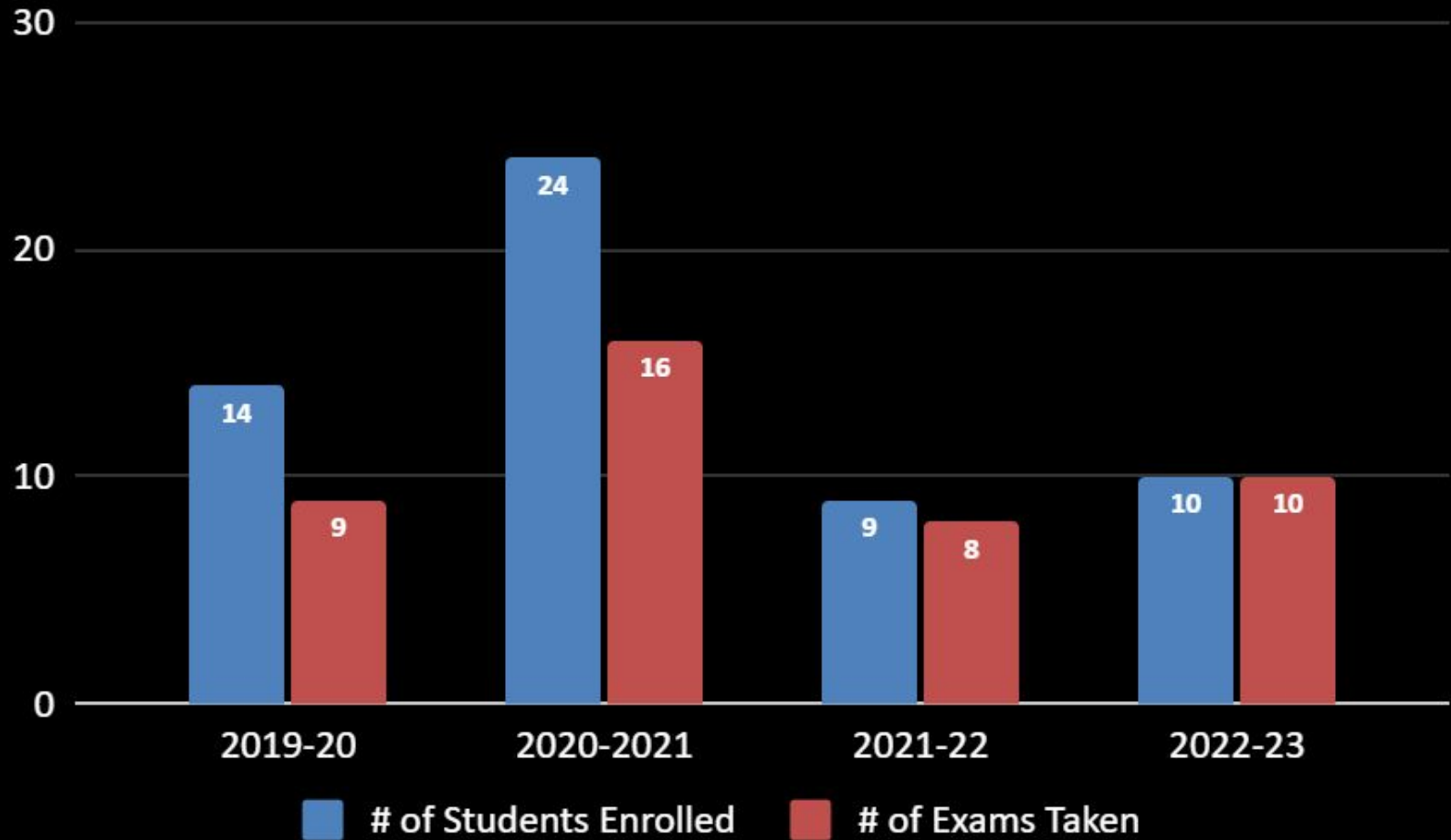
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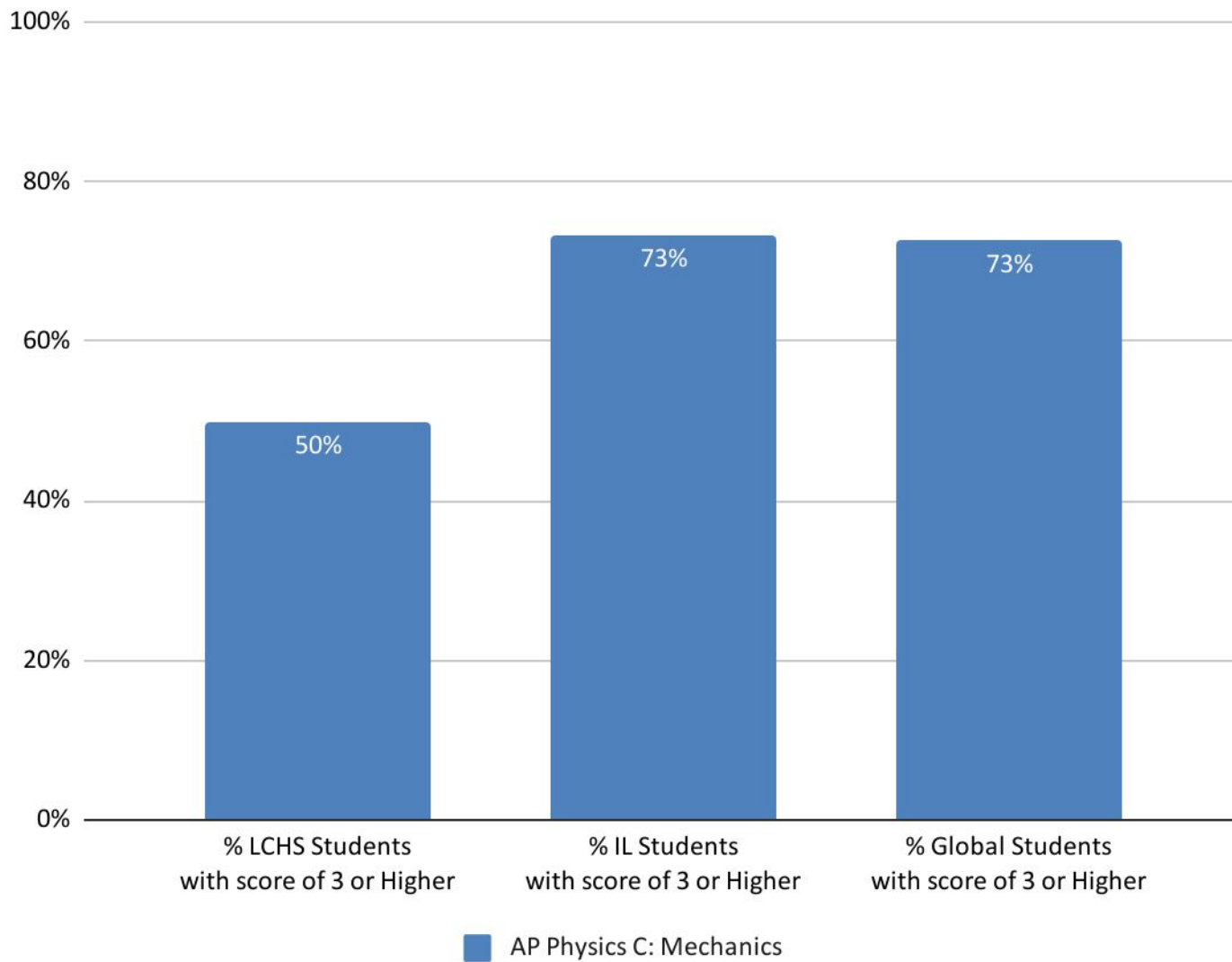
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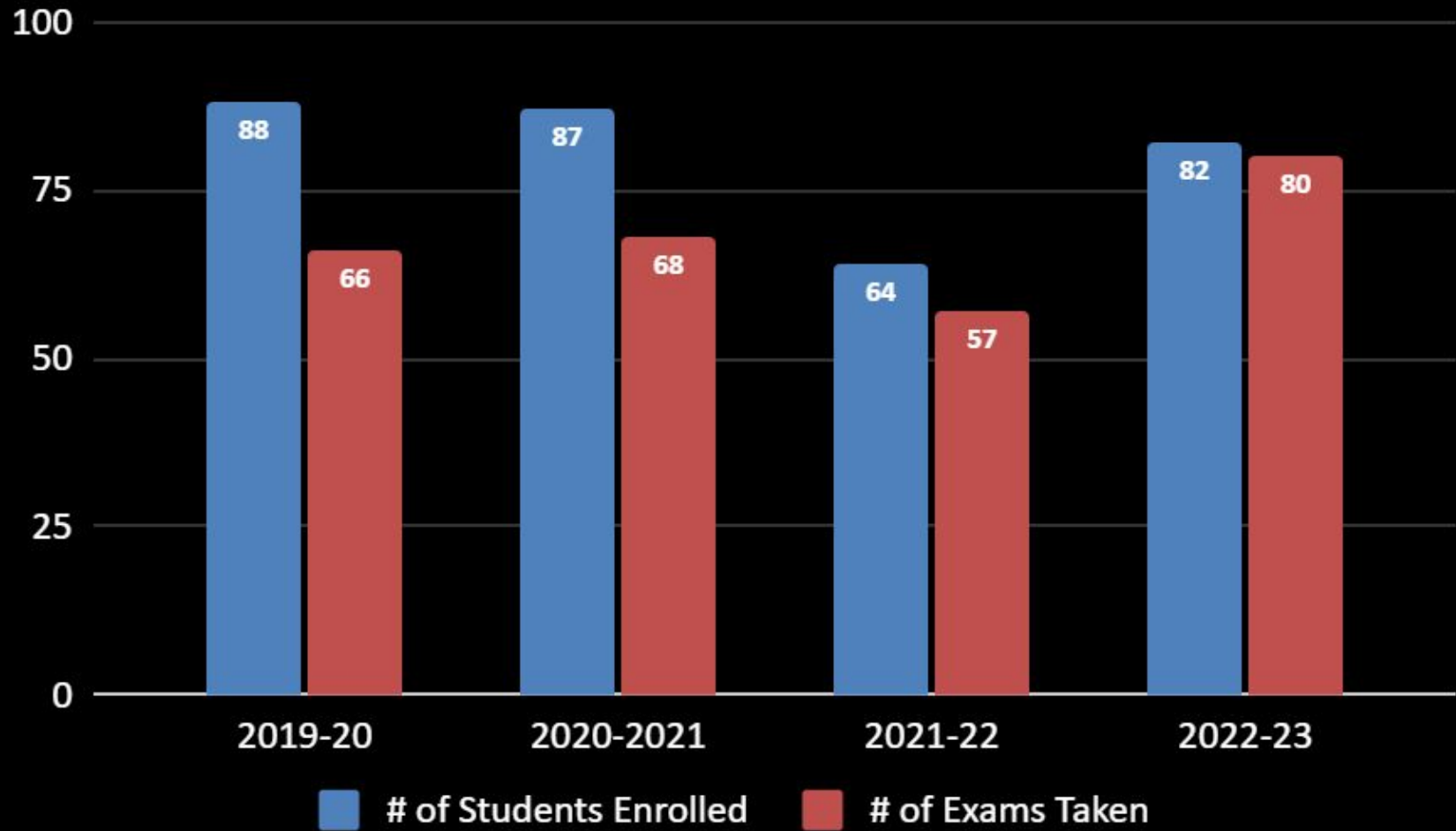
AP Physics C: Mechanics



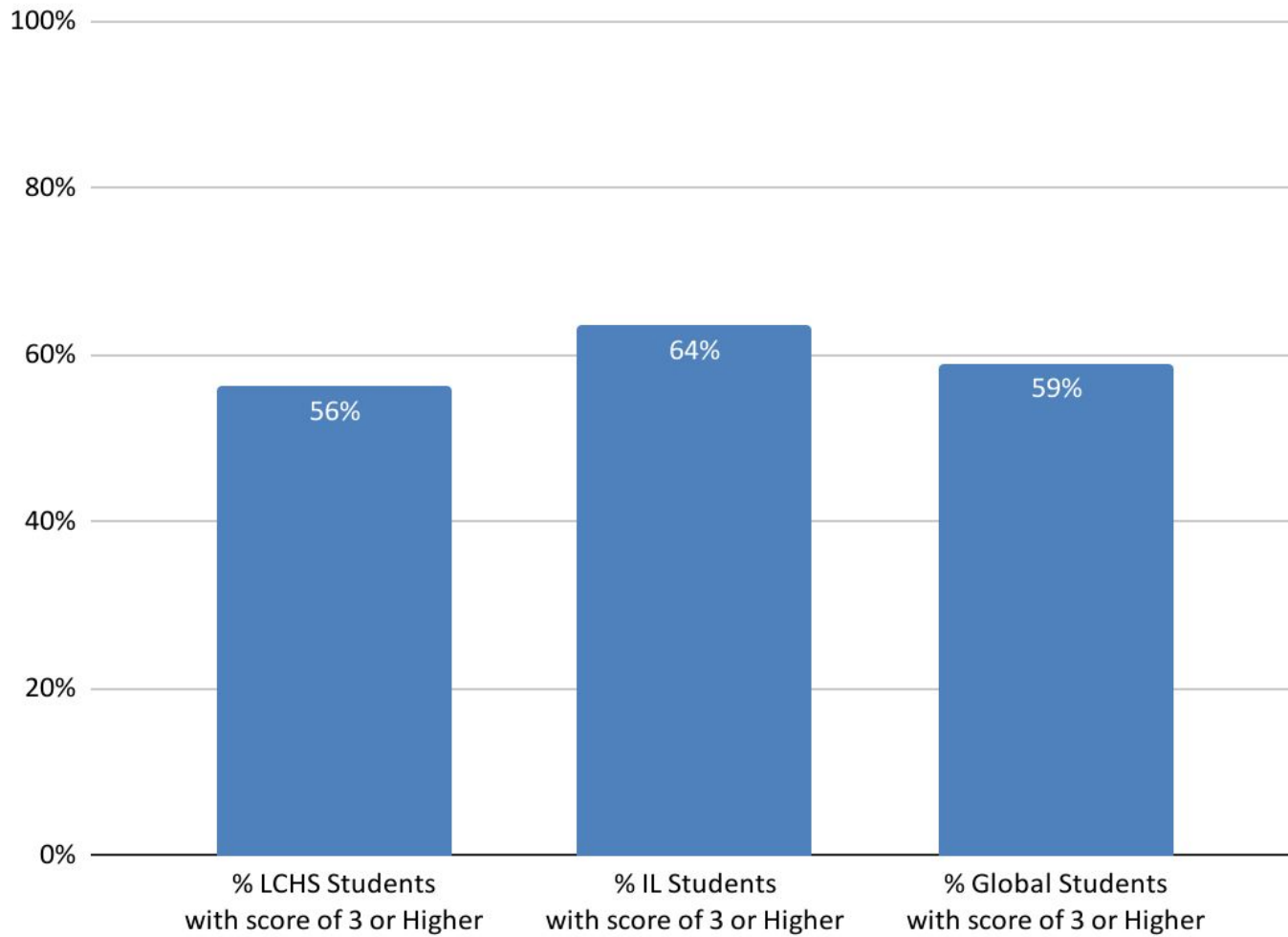
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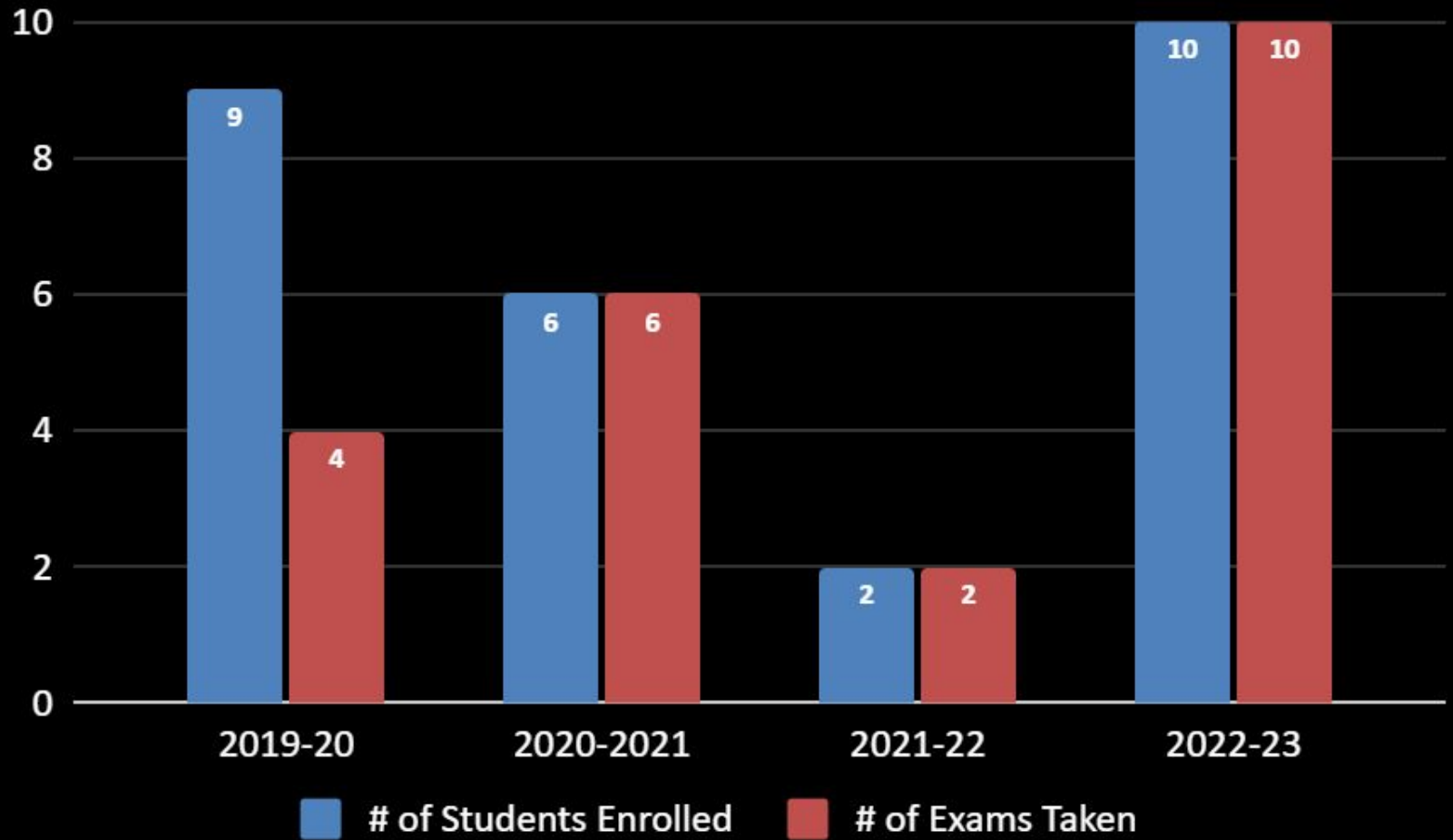
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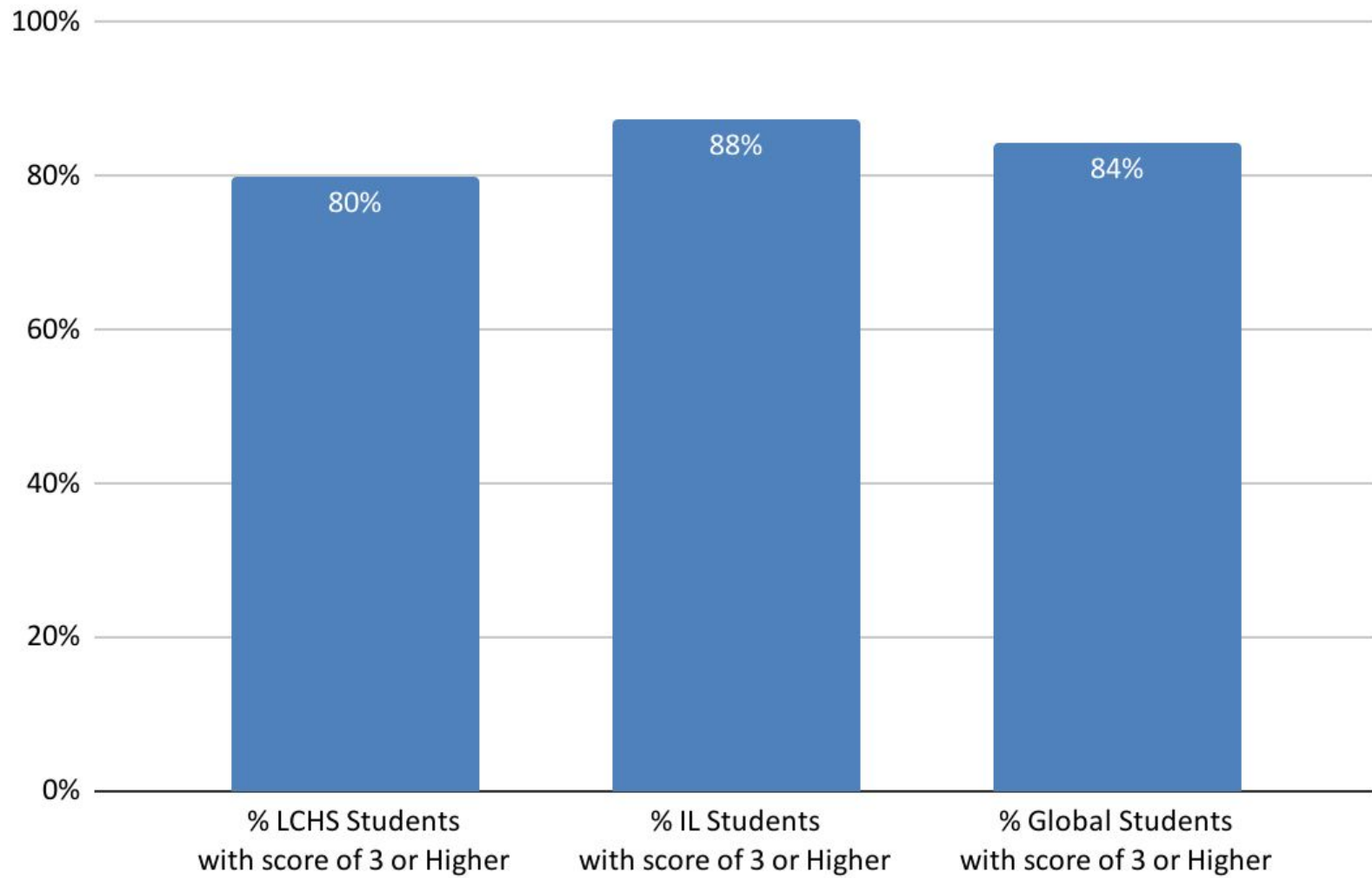
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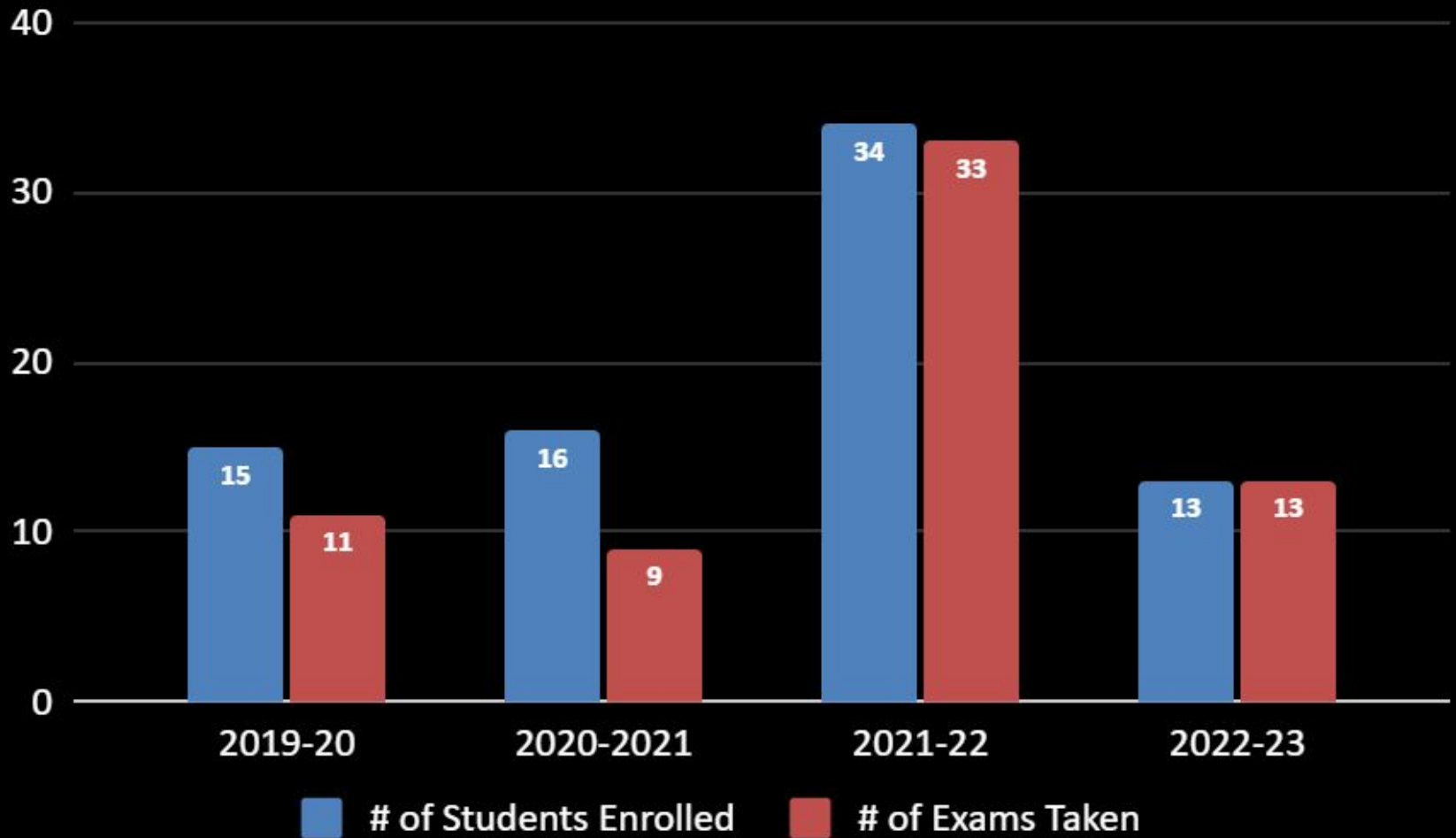
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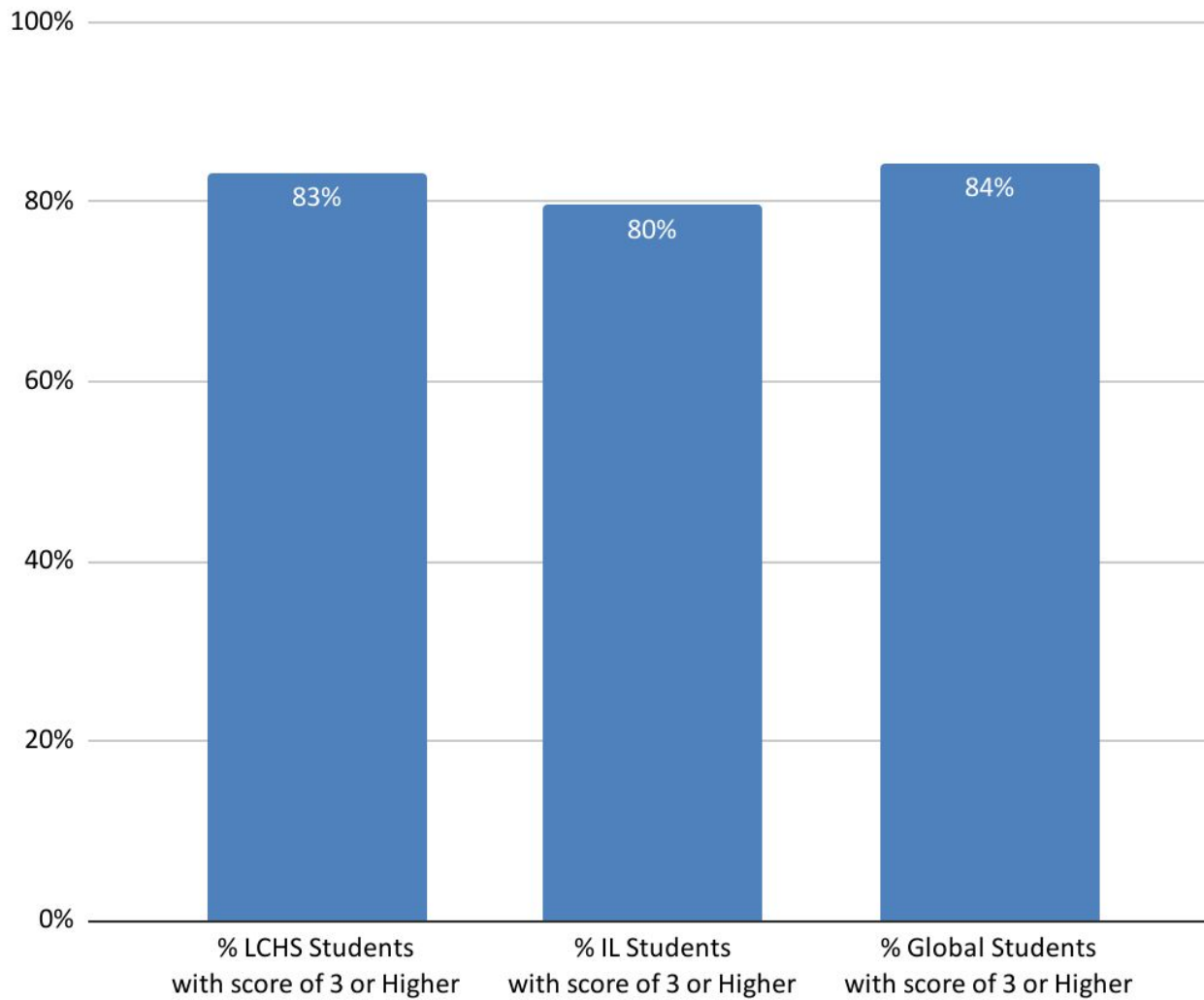
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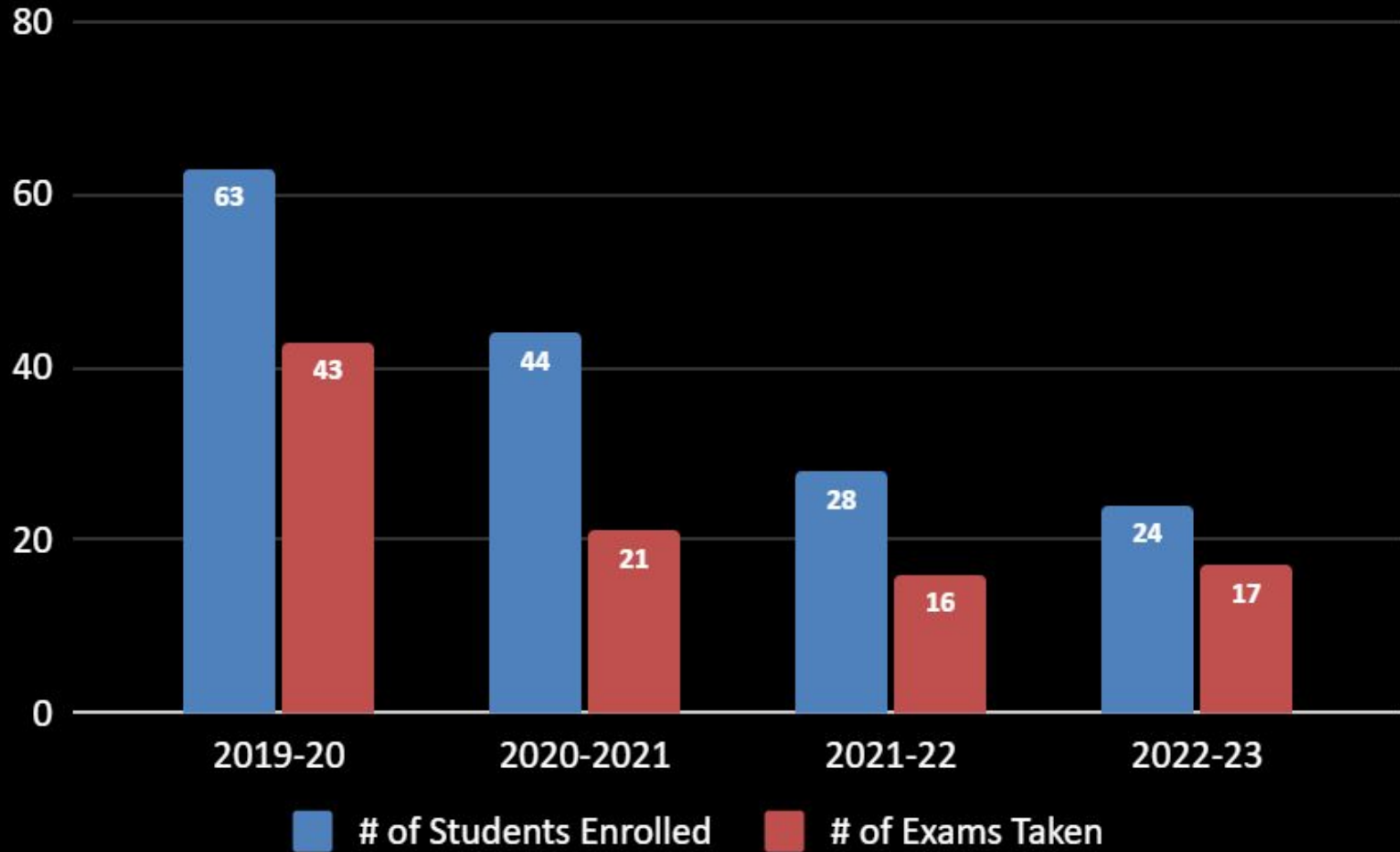
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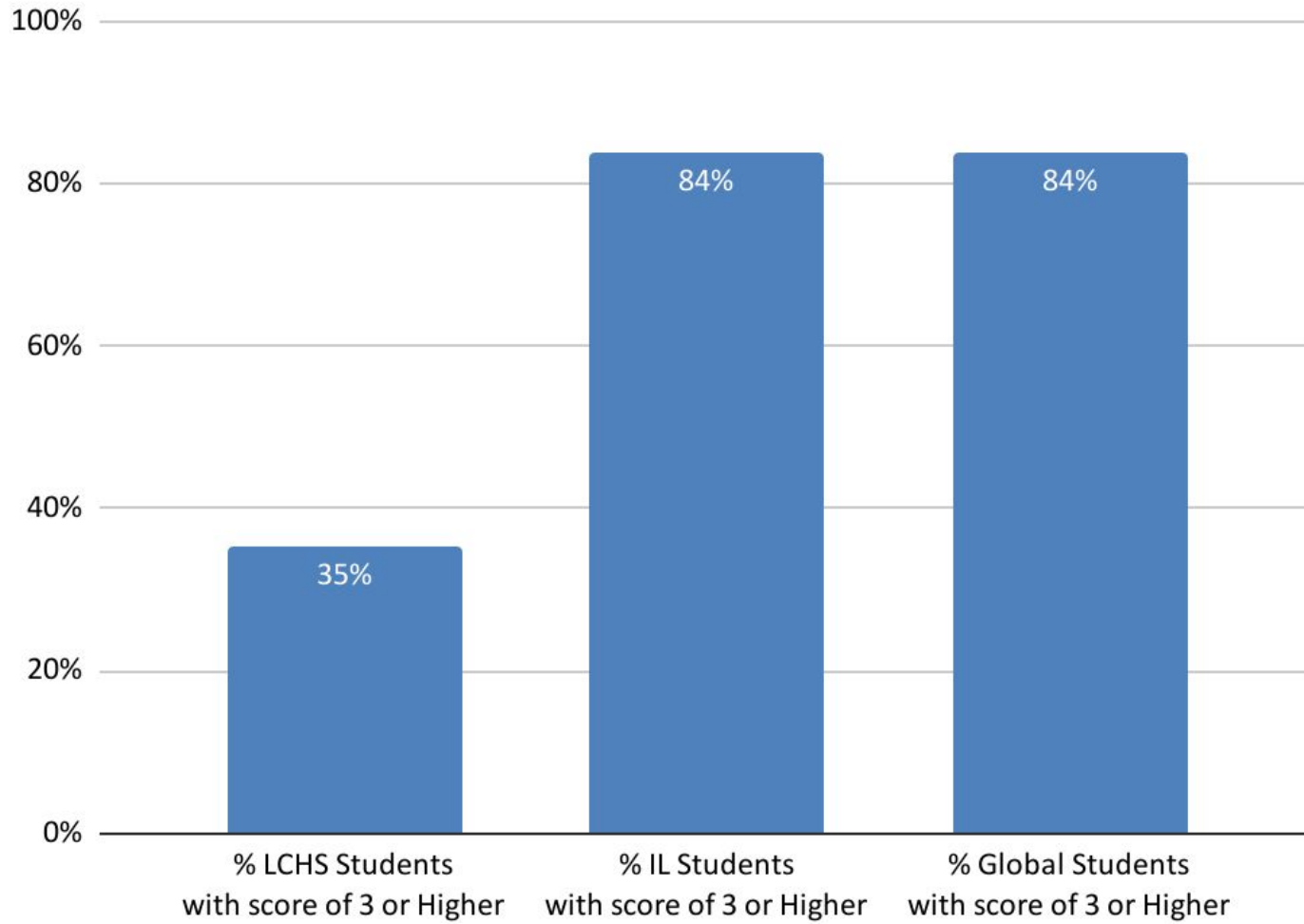
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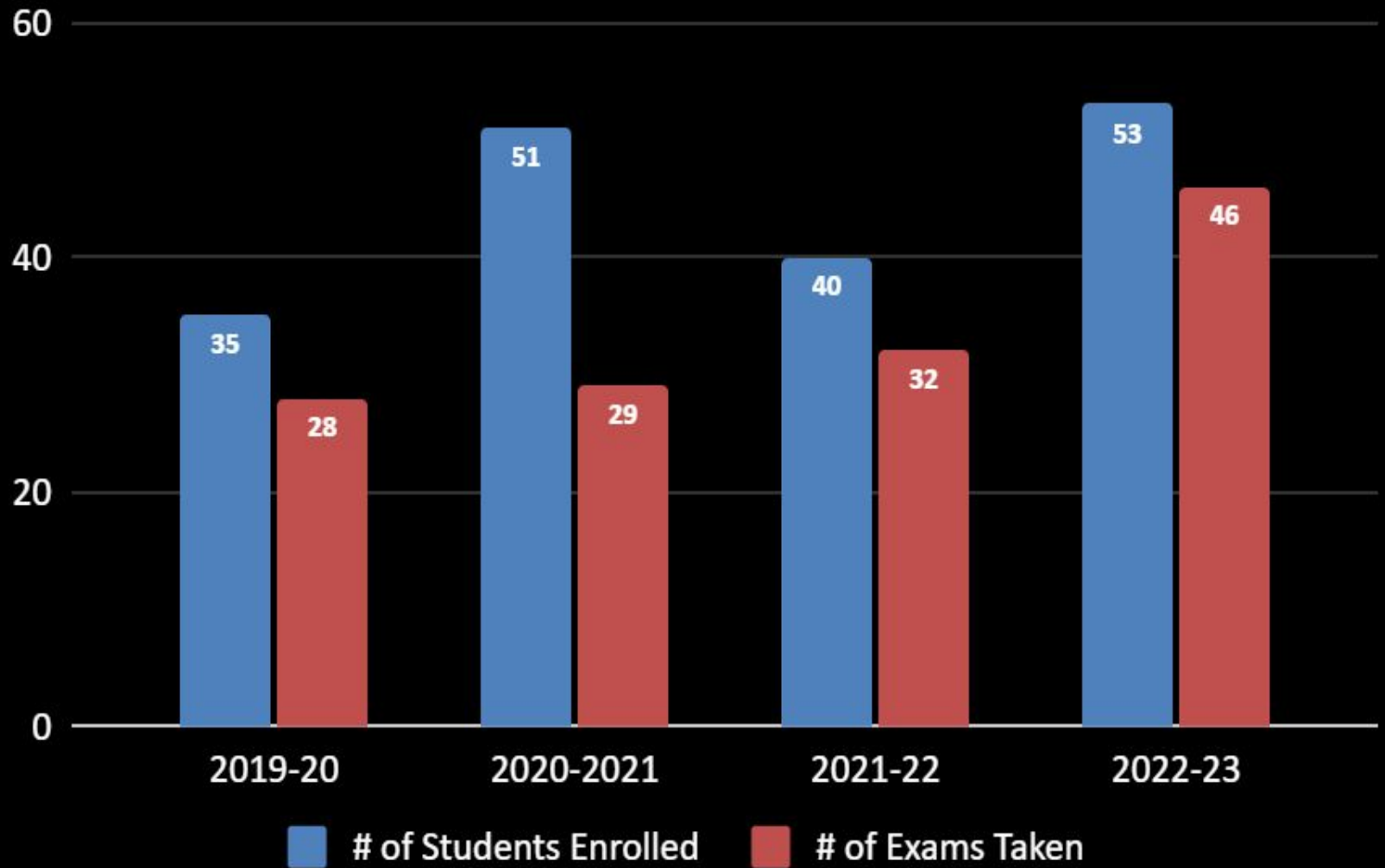
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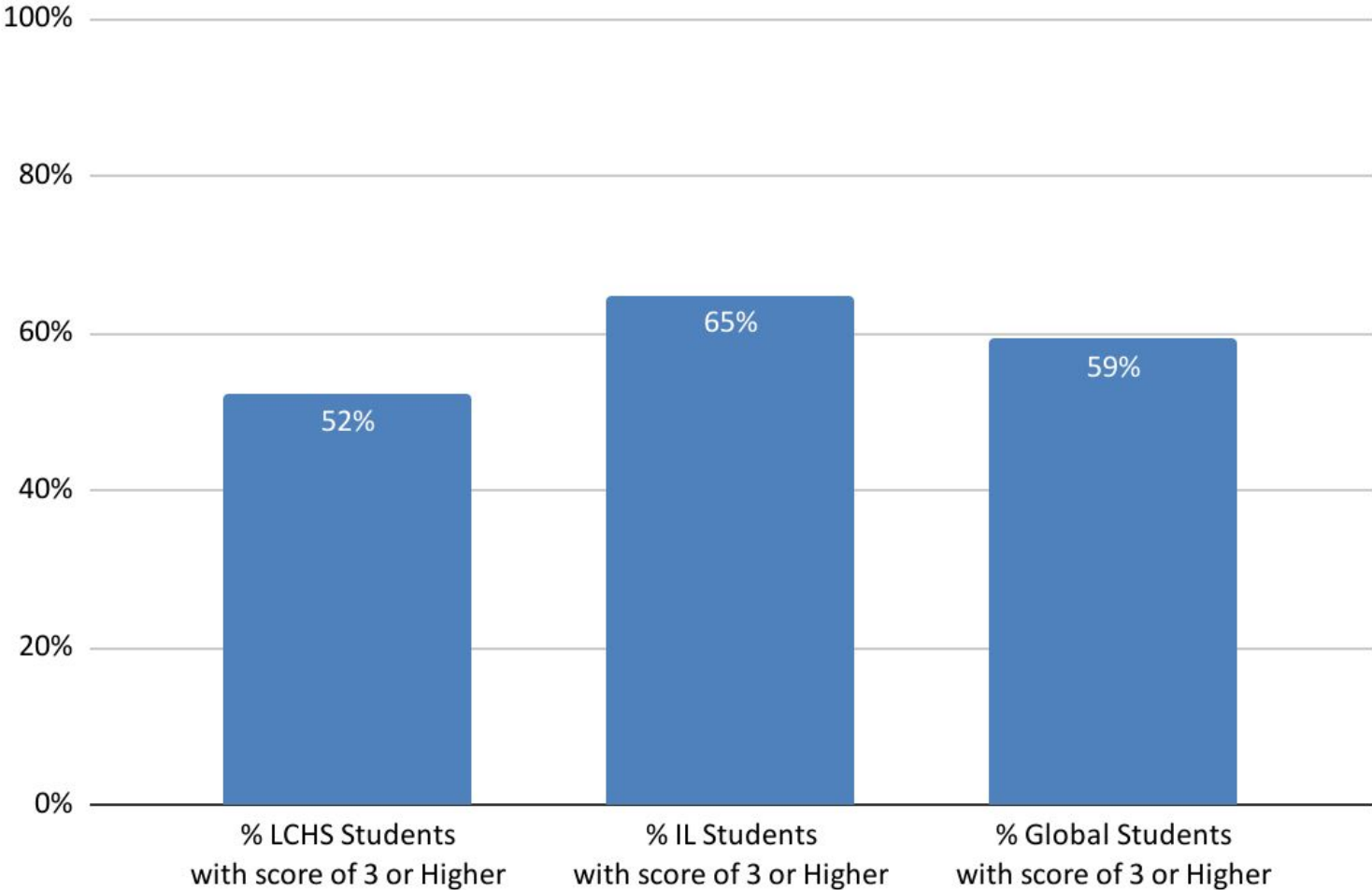
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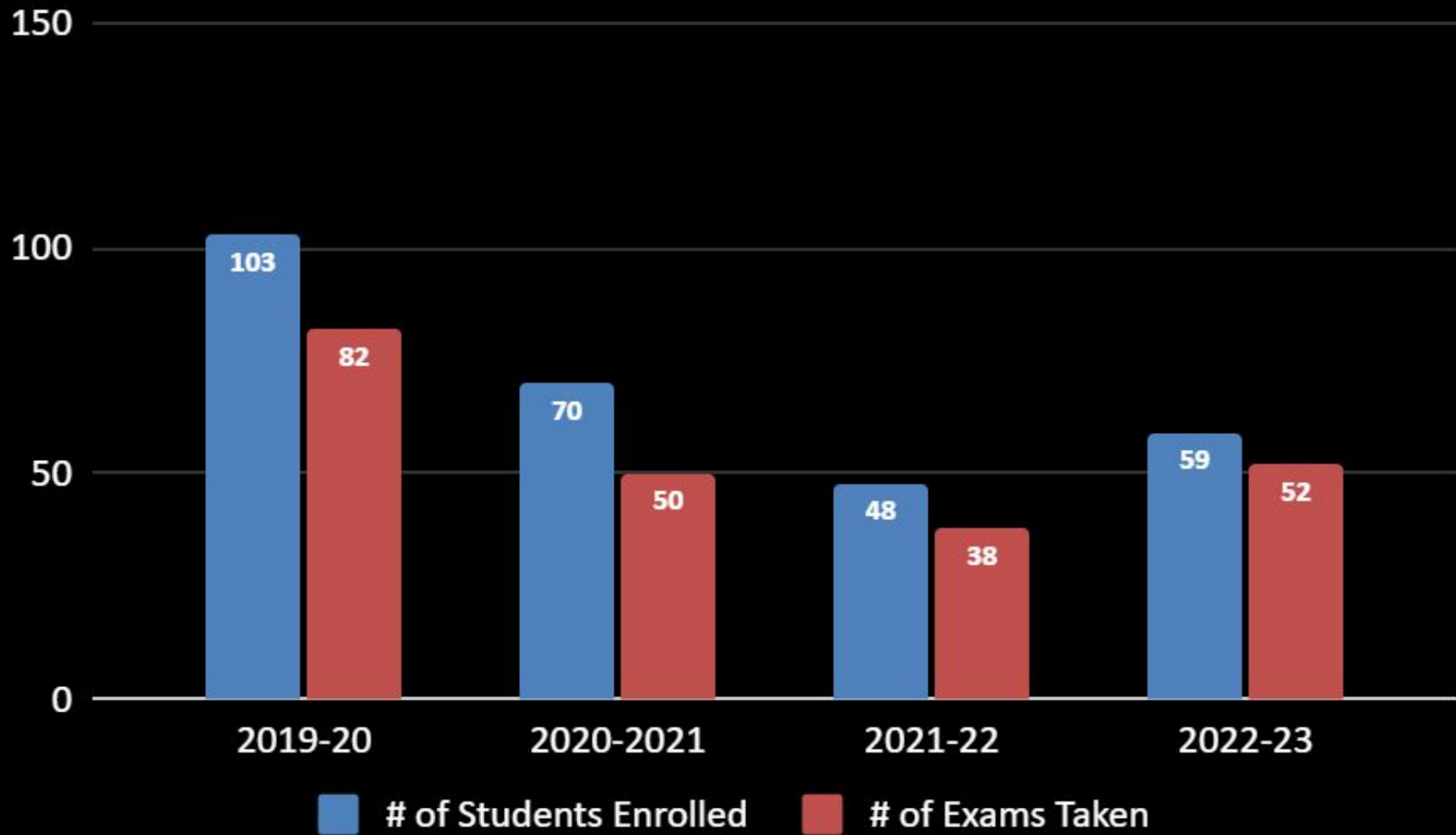
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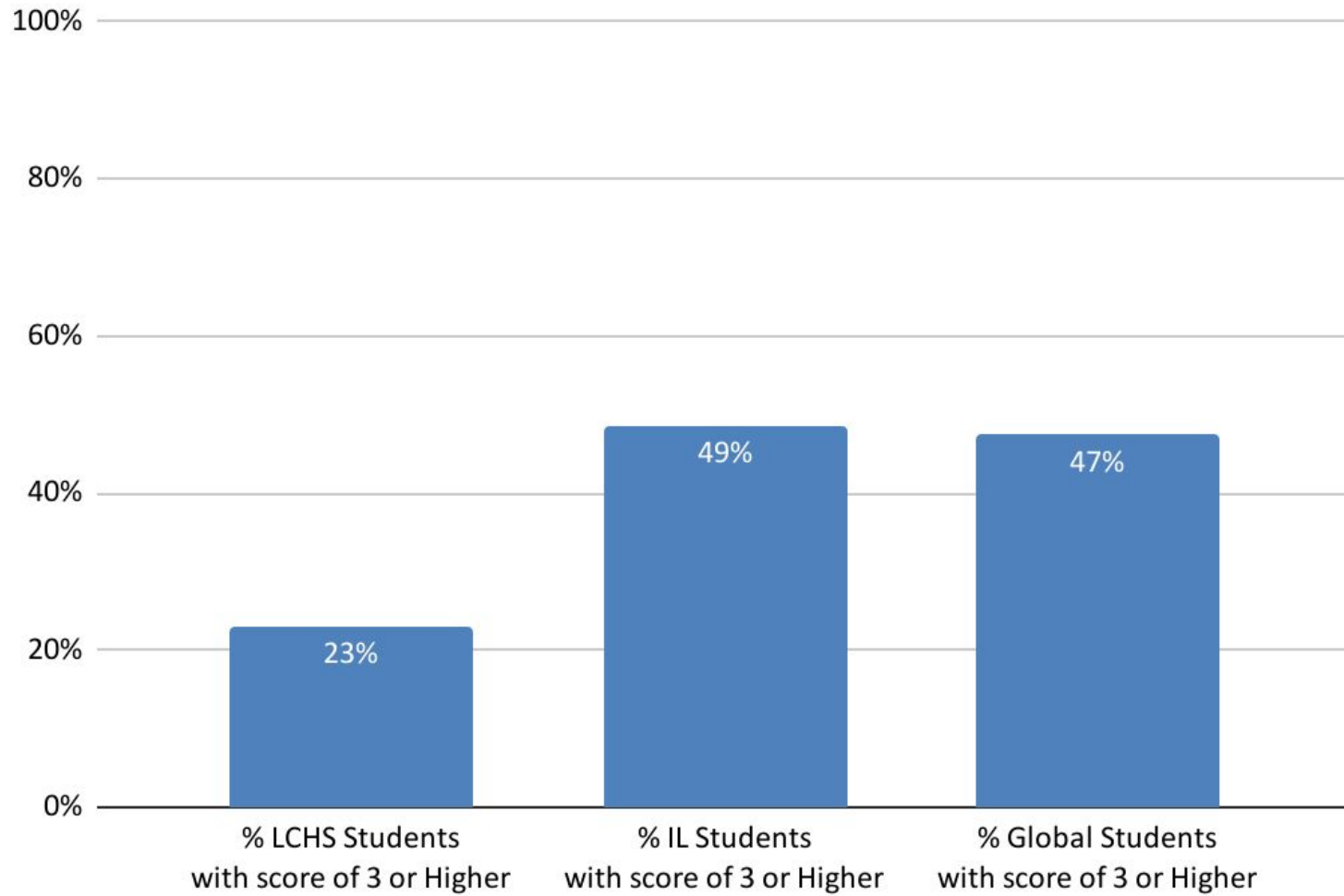
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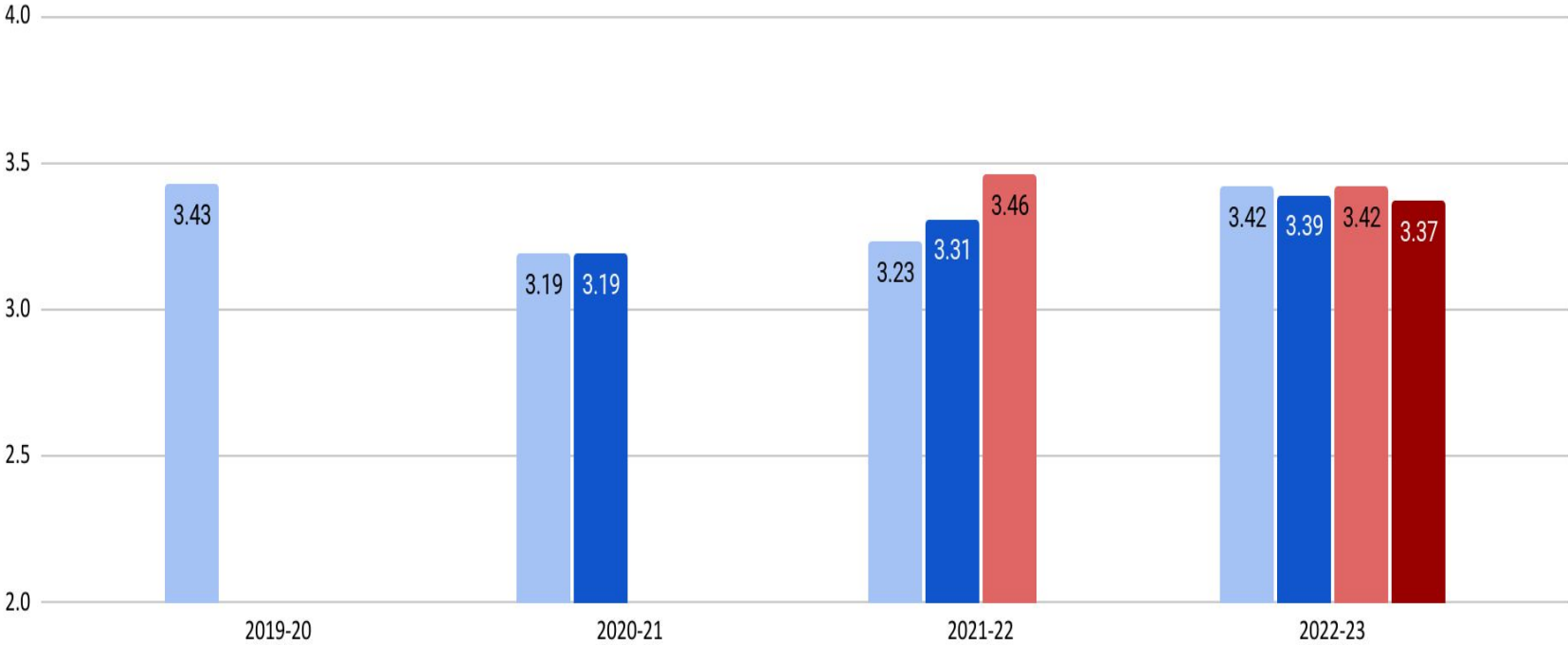


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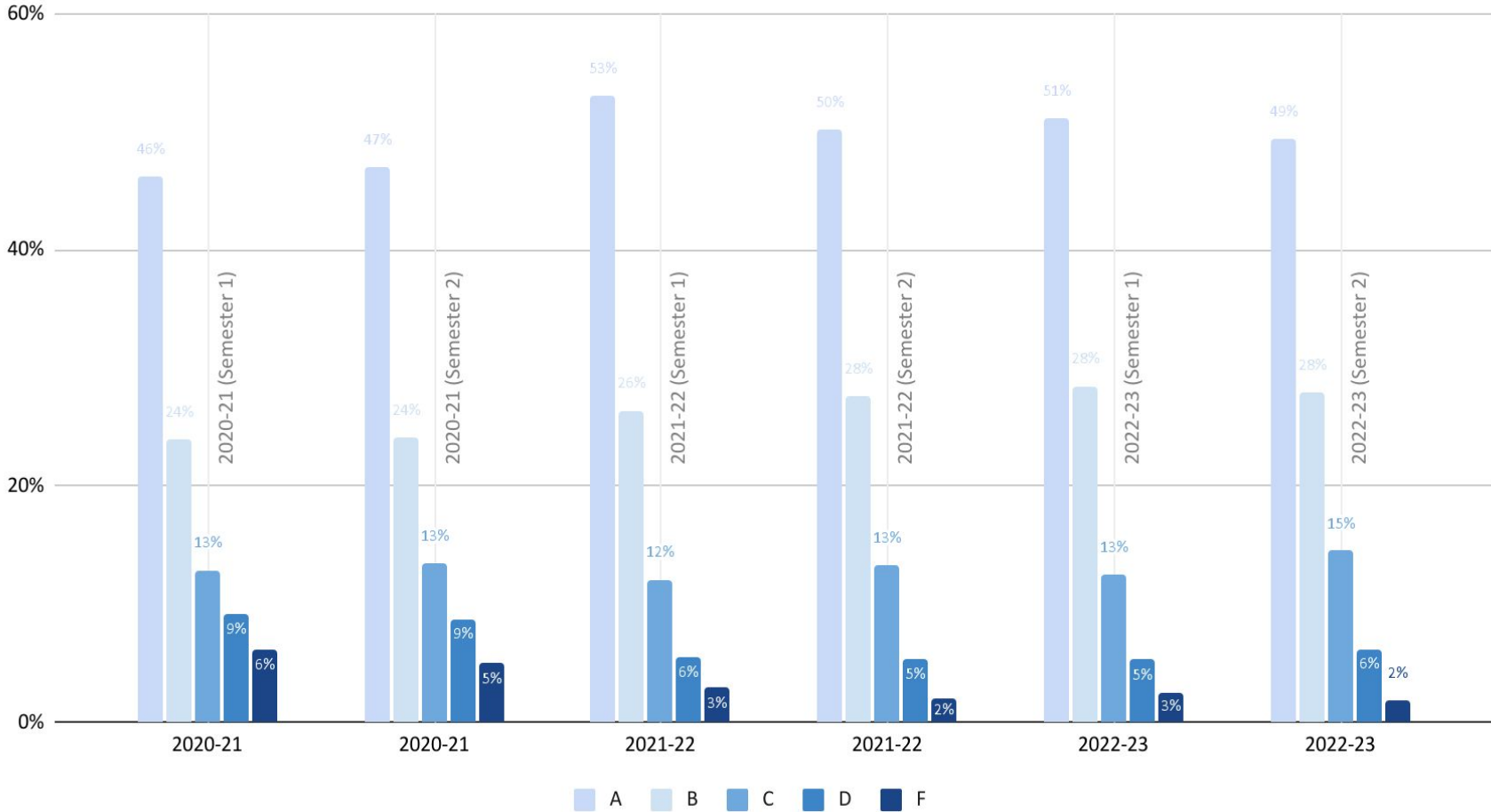


Weighted Grade Point Average by Class

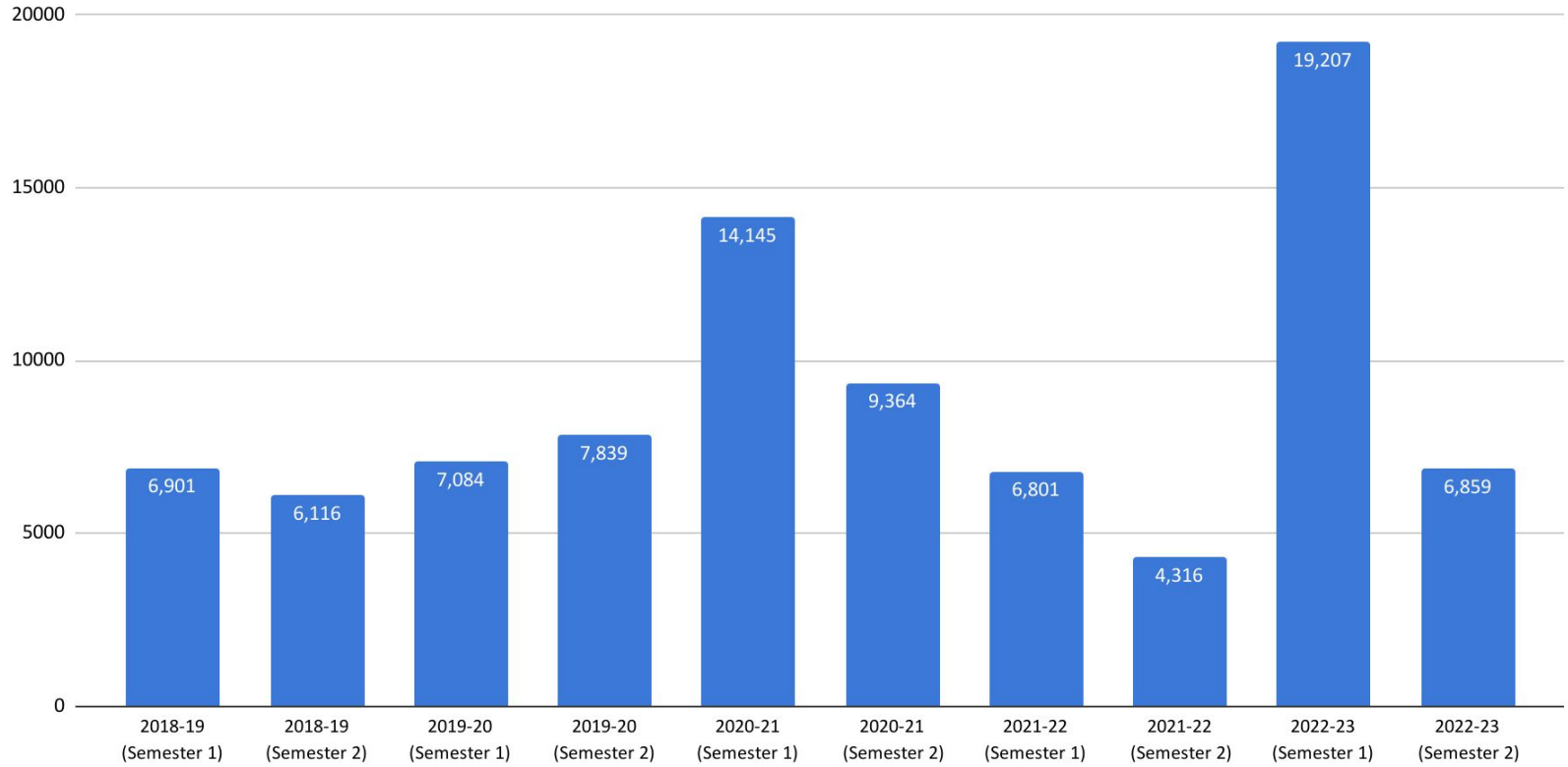
Class of 2023 Class of 2024 Class of 2025 Class of 2026



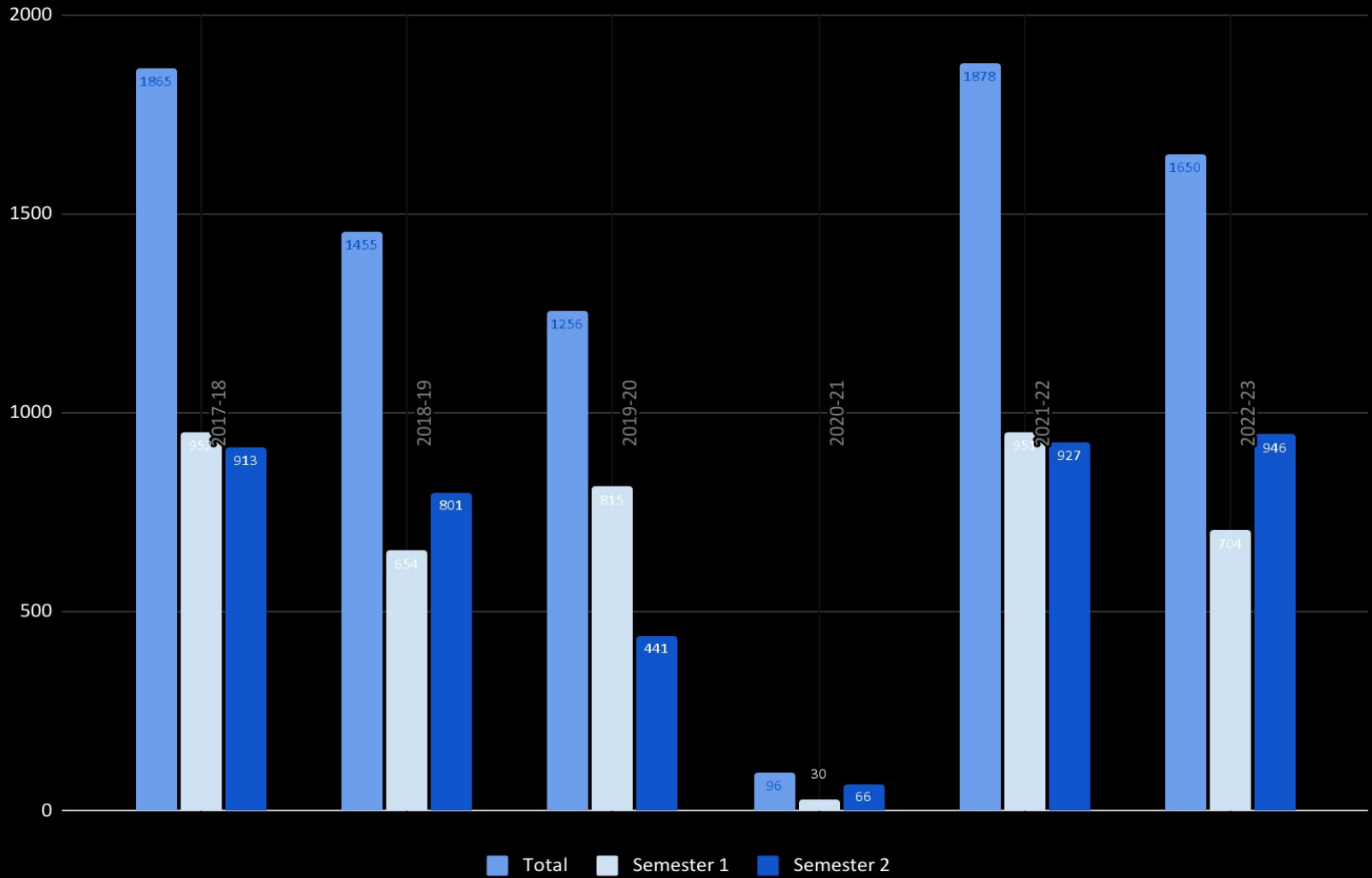
Grade Distribution Over Time LCHS



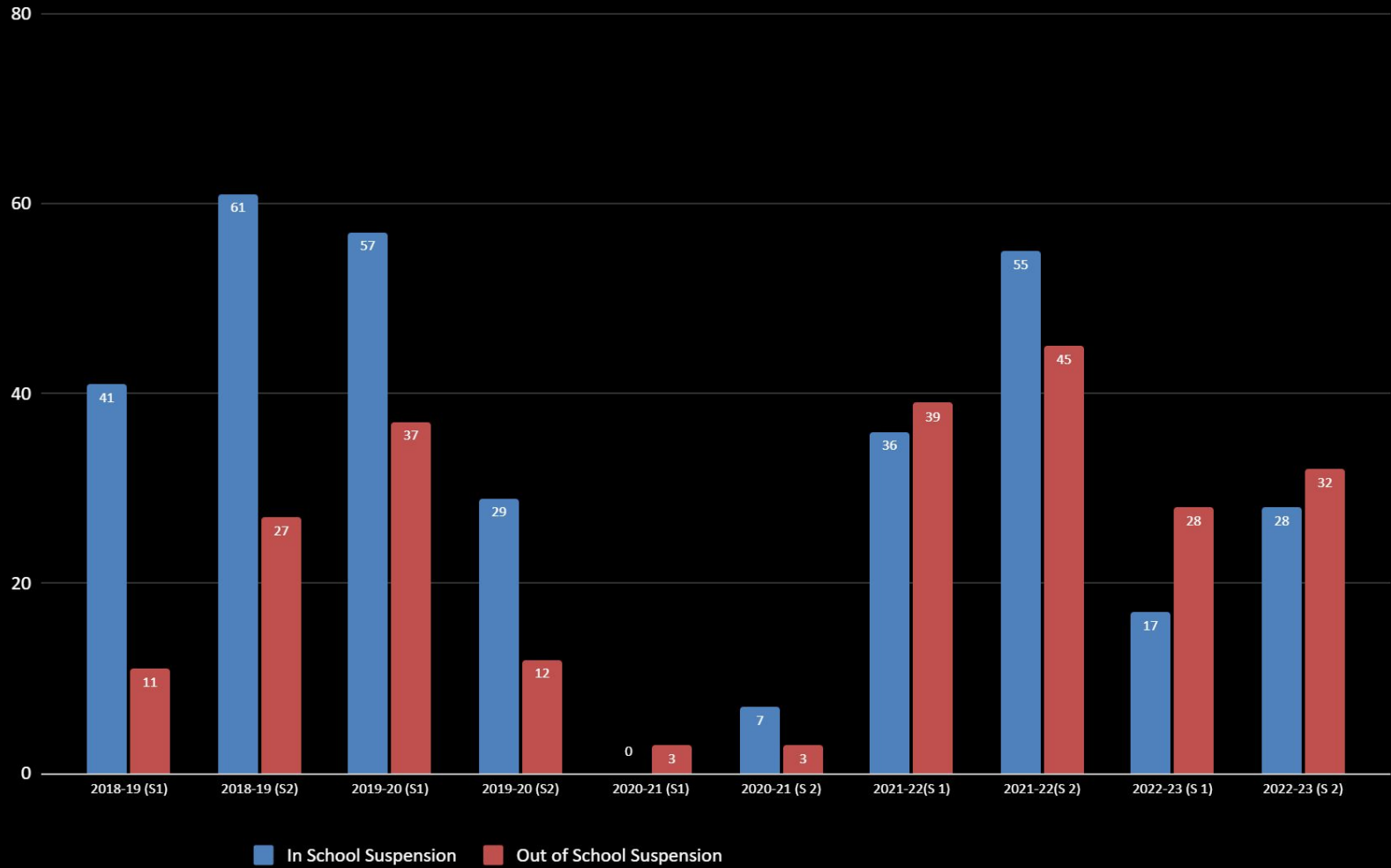
Teacher Contact Logs at LCHS



Discipline Referrals Over Time at LCHS

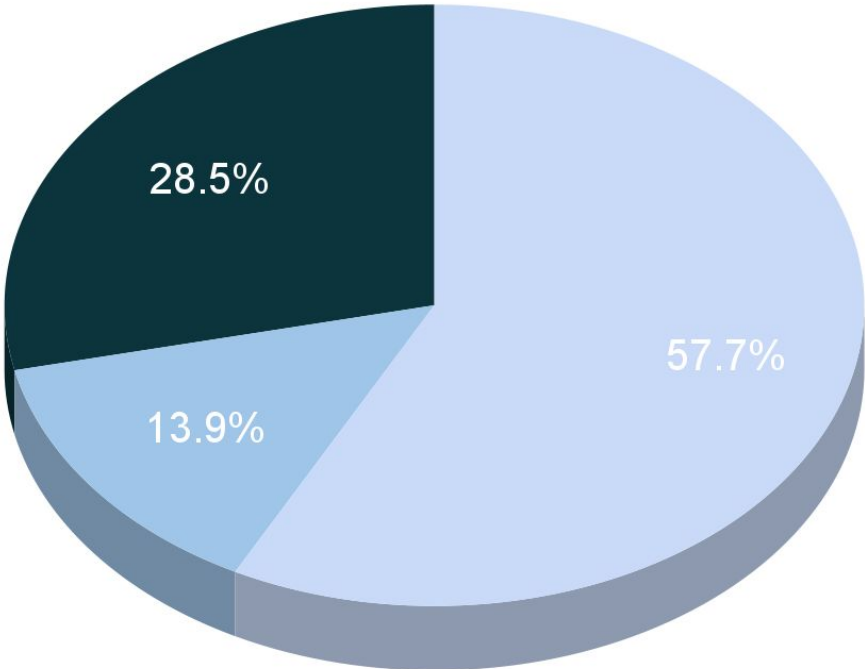


Suspension Data Over Time LCHS

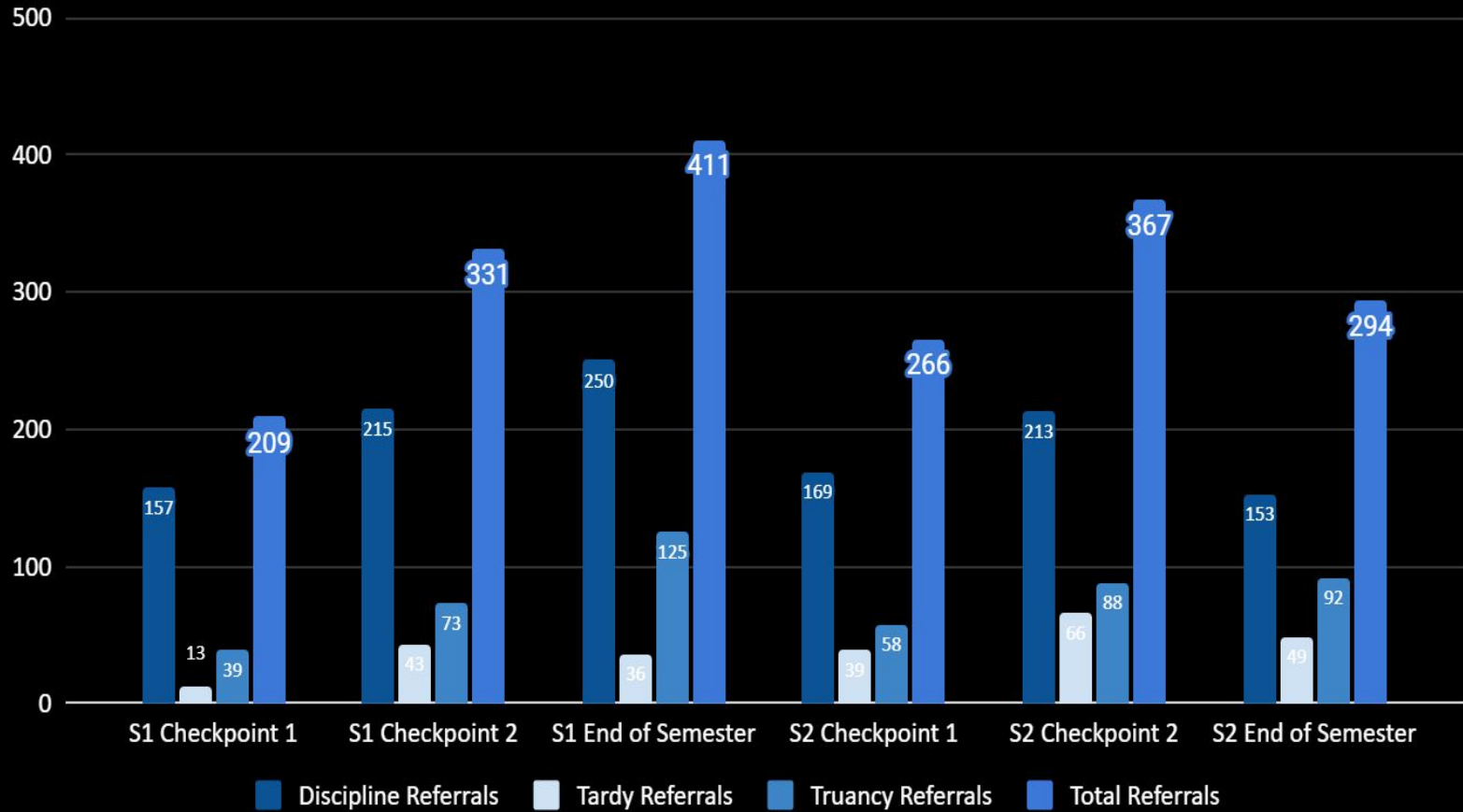


2022-23 Total Referrals, Tardy Referrals, Truancy Referrals and Discipline Referrals

- Tardy Referrals
- Truancy Referrals
- Discipline Referrals



2022-23 Tardy Referrals, Truancy Referrals and Discipline Referrals



Educational Research



Photo by Robby Olson
Class of 2017

Educational Research

- Achor, Shawn. (2010). The Happiness Advantage: The Seven Principles of Positive Psychology That Fuel Success and Performance at Work.*
- Achor, Shawn. (2018). Big Potential.*
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Soar to the top, Eagles!

Heterogeneous Mixture of Amino Acids and Self-assembly on Metal Surfaces

Madeline Chorazy¹, Andrew Cook¹, Nathan P. Guisinger², Luis Hernandez², Jeff Newton¹, Colin Shea¹, Jia Singh¹, Inna Stan¹, Cody Summerson¹, Rachel Ward¹
¹Lakes Community High School, Lake Villa, IL 60046
²Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL 60517

ABSTRACT

In this study, novel atomic-scale exploration of molecular self-assembly of the chiral amino acid proline and tryptophan on Cu(111) was demonstrated. This research aimed to further the knowledge and understanding about how L-proline and L-tryptophan self-assemble, noting how chirality affects their interactions. Homochiral samples of both L-tryptophan and L-proline on a Cu(111) surface were individually explored, as well as a racemic (50:50) mixture. A scanning tunneling microscope was used to map the self-assembly at a clear molecular resolution. This experiment was performed in an ultrahigh vacuum to avoid interference from outside particles. By analyzing the results, it was found that L-proline forms molecular trimers as base units that assemble into larger hexagonal tilings. Similarly, L-tryptophan forms molecular trimers on base units that assemble into long chains. There was also findings of individual molecules within the hexagonal tiling of proline. The findings for the L-tryptophan and L-proline racemic mixture were found inconclusive.

RESULTS

Proline molecules on a Copper(111) surface self-assemble into a hexagonal tiling (Figure 1). Due to chirality, however, there is an approximate 30° difference in orientation. Each hexagon is made up of 6 trimers, which is a group of 3 molecules. A new discovery was that it is possible for a stray molecule to be trapped inside of the hexagonal structure. The stray molecule trapped inside moves to one of the six corners of the hexagon, it is within (Figures 2 and 3). It is unclear whether these molecules are proline molecules or that molecules due to an imperfect vacuum.

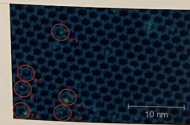


Figure 1
Possible hexagonal proline trimers together

CONCLUSIONS AND NEXT STEPS

After the analysis of the self-assembly of L-proline and L-tryptophan, on a Cu(111) with the use of a scanning electron microscope, two separate patterns were identified in assembly. The self-assembled amino acids repeated their pattern enough times to create hexagonal structures in the L-proline mixture, but only in the L-tryptophan mixture. While the trimers in the L-proline mixture were identified, the L-tryptophan mixture did not assemble into the hexagonal structure yet consisted within the structure. To be able to further research in this field, the same firm analysis for each type of amino acid would be repeated. Forming the be a small step forward. The data gathered from potential self-assembly patterns on different metal surfaces as well as racemic mixtures of different amino acids would be another next step.

MOTIVATION

Molecular self-assembly is an essential part of nature and is vital in all biological organisms. Having insight into how chirality works with L-proline and L-tryptophan will lead to a variety of useful applications including the fabrication of proteins, drug development and innovation, and discovering more about how life works. This research may even lead to further understanding on why all life is based on the L-isomerism of amino acids.



Figure 1
L-Proline on a Cu(111) surface

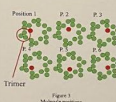


Figure 3
Mixed proline trimer

When L-tryptophan and L-proline were mixed in a 50:50 solution on a copper surface, they formed two distinct regions. One region consisted of a regular proline structure, in which it assembled into a large hexagonal complex. The other region is composed of random arrangements of tryptophan molecules, (and possibly proline) with no generalized pattern (Figure 6). While this could be due to some other factor, it was most likely degradation of the source tryptophan material. The original isolated tryptophan data was collected from a control sample different from the tryptophan used in the 50:50 mixture, and when the new tryptophan was analyzed in an isolated assembly, it could not replicate the initial control. No conclusions can be made at this time based upon the mixture until a proper sample set is obtained.

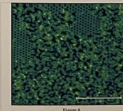


Figure 6
Mixture



Scanning Tunneling Microscope used for this experiment

METHODS

Experiments were performed at Argonne's CNM Laboratory. L-tryptophan and L-proline were deposited onto a copper surface both separately and in a 50:50 mixture. Scanning Tunneling Microscopy (STM) was used to capture the images. Gwyddion program was used to enhance the images for better analysis.

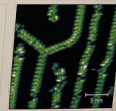


Figure 4
L-Tryptophan on a Cu(111) surface



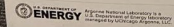
Figure 5
Chain between the rest of L-tryptophan

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