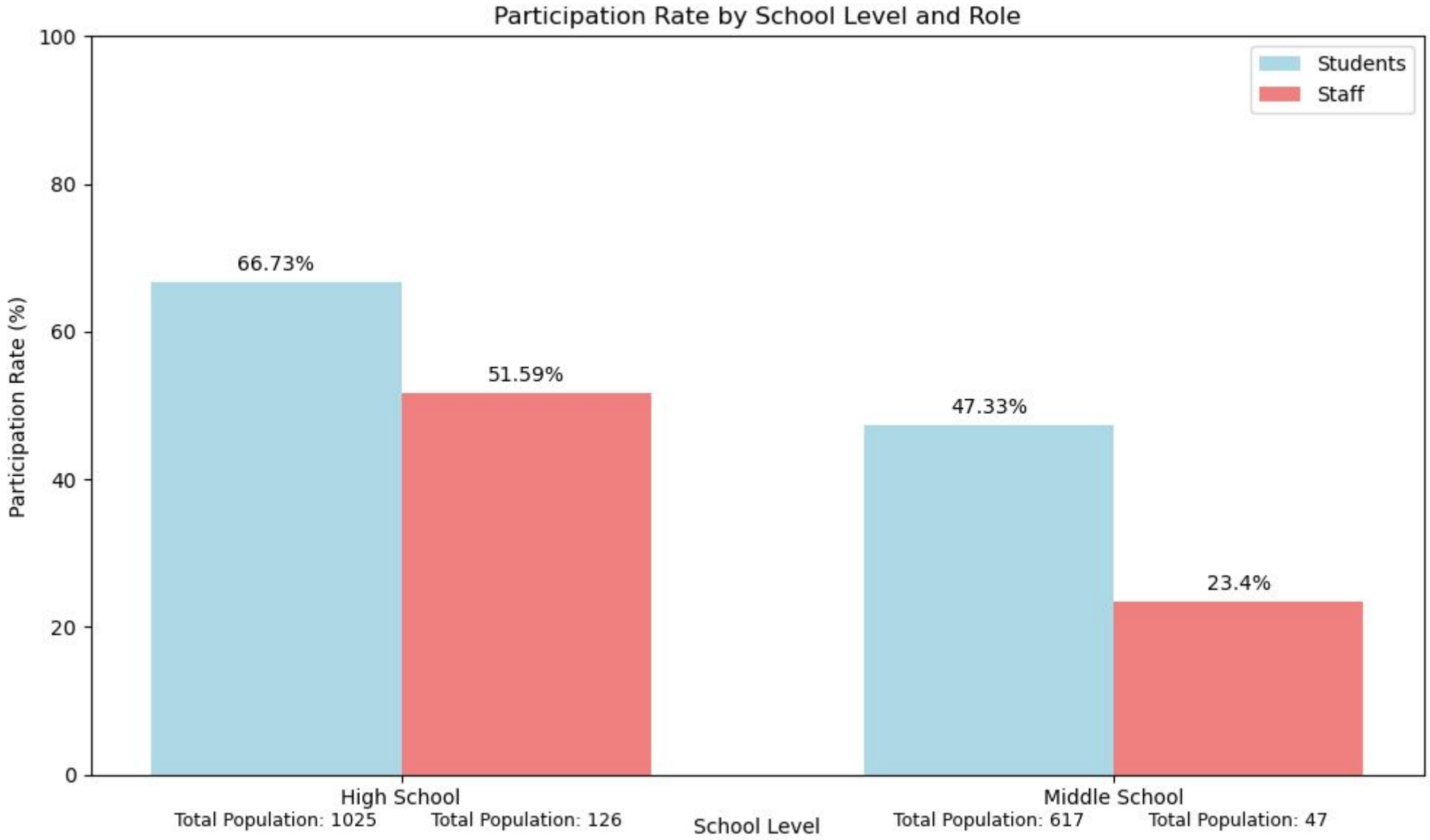
2ND CONNECTED CLIENT MEETING

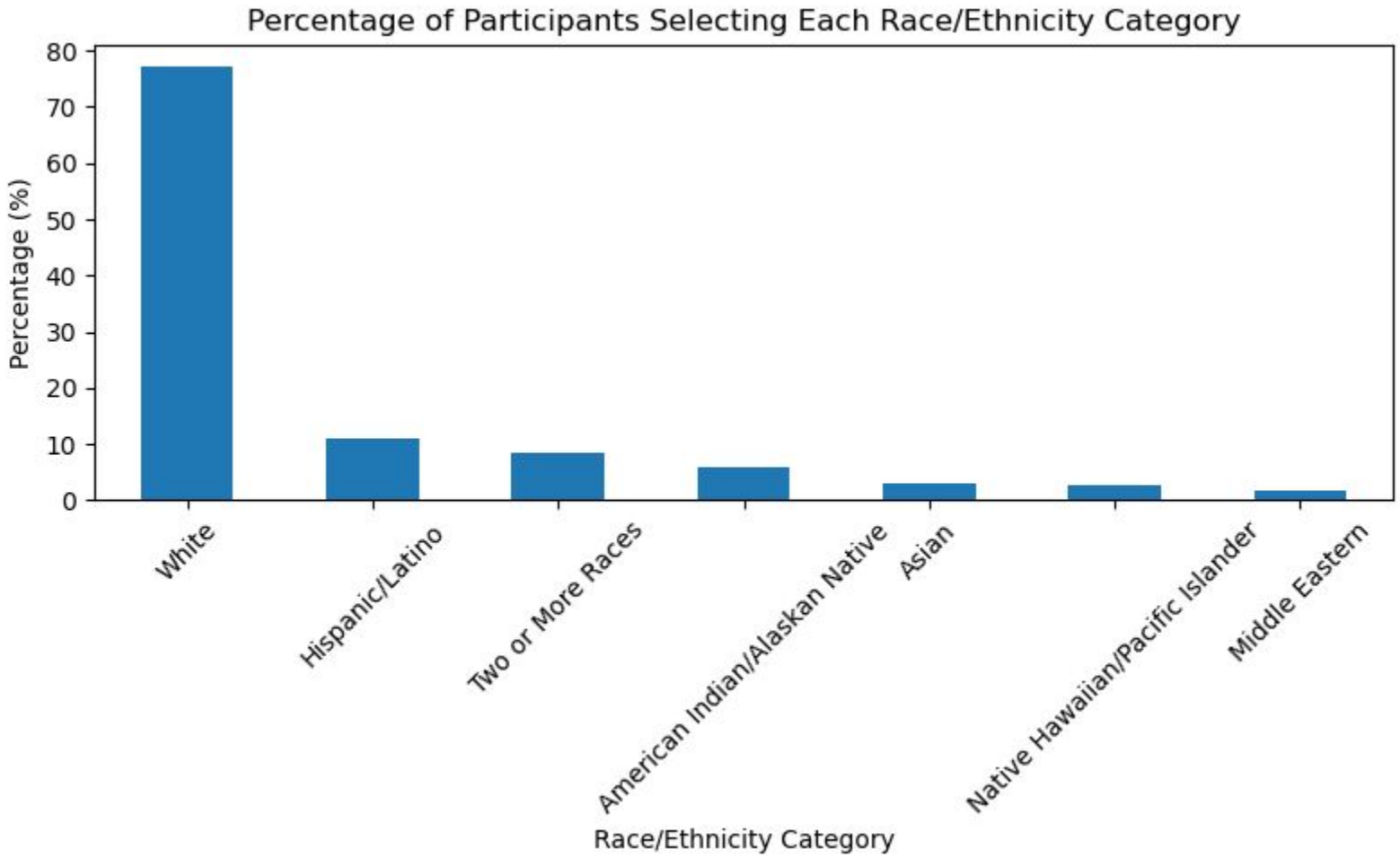
PROJECT UPDATES

Updated Participation Metrics



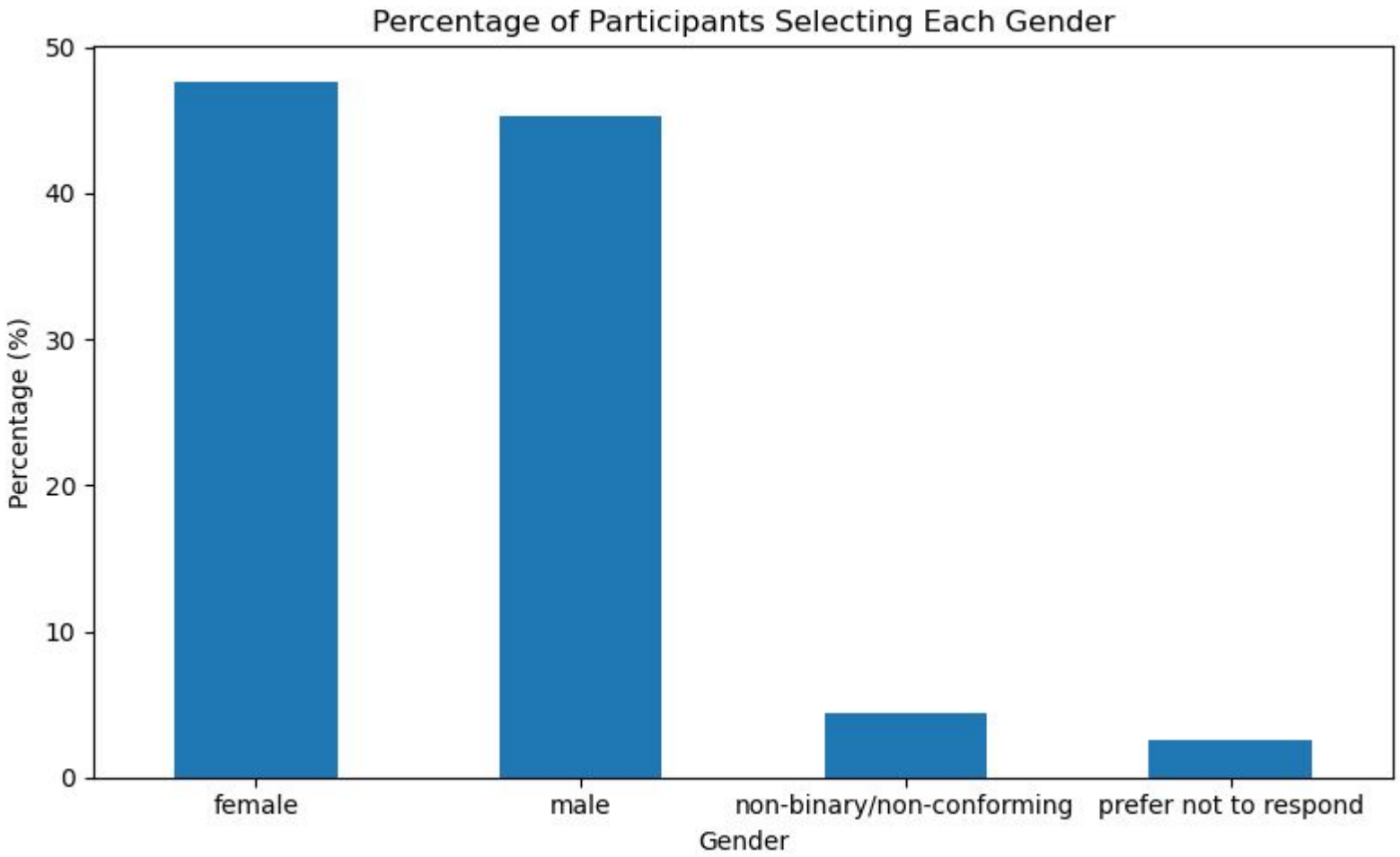
PROJECT UPDATES

Updated Participation Metrics



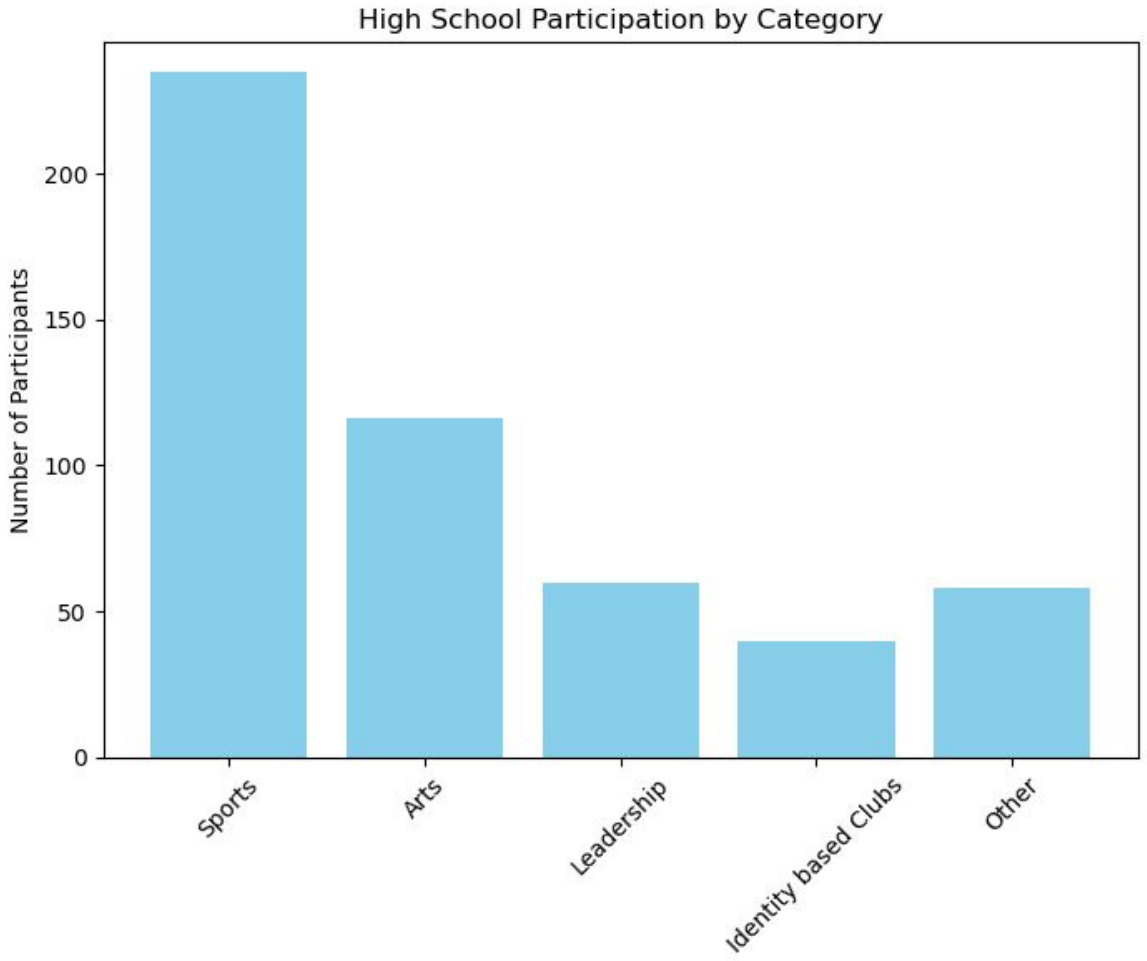
PROJECT UPDATES

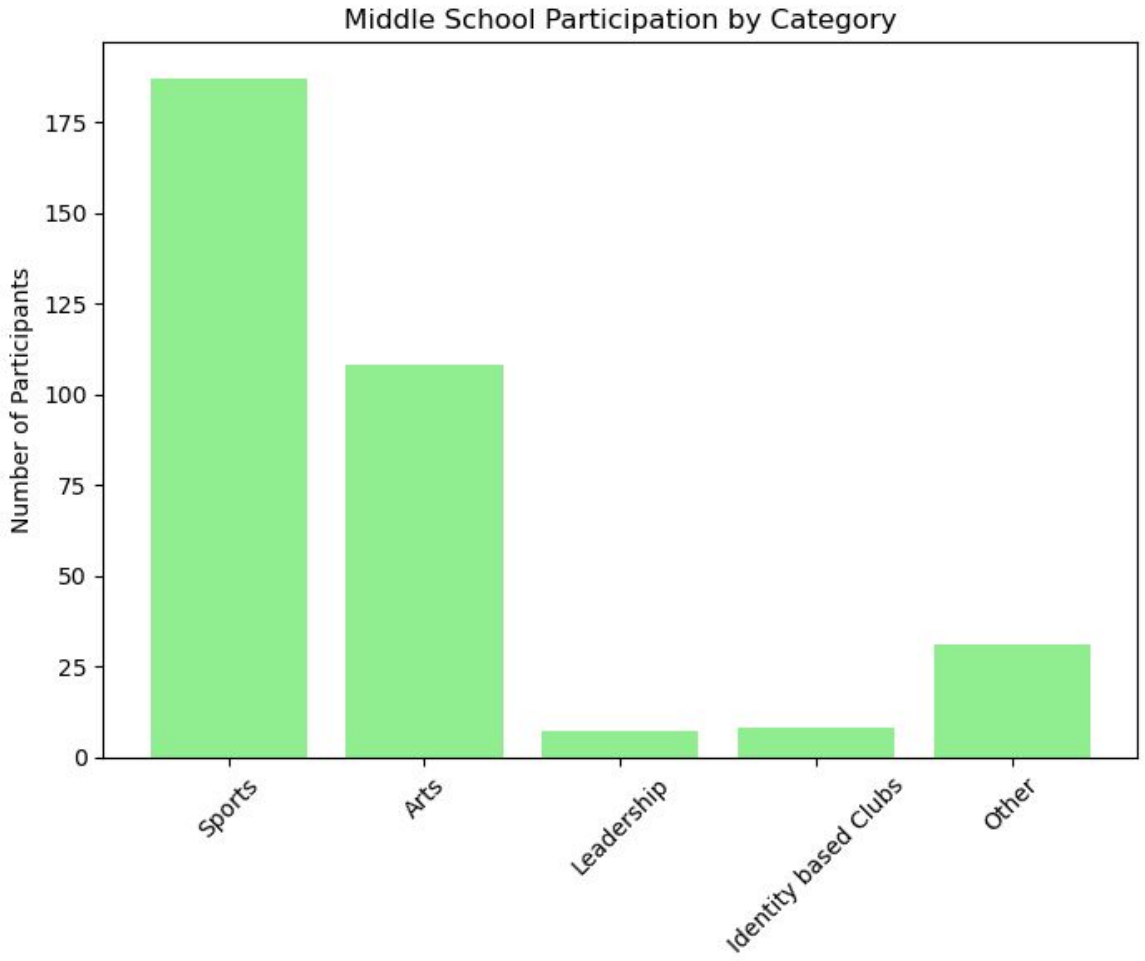
Updated Participation Metrics



PROJECT UPDATES

Updated Participation Metrics





PROJECT UPDATES

Types of centrality metrics:

- **Indegree:** number of people connecting with you
- **Outdegree:** number of people you connect with
- **Betweenness:** measures how often someone acts as a intermediary in the shortest paths between other people.
- **Eigenvector:** measures influence in the network based on both number and popularity of connections.
- **Clustering Coefficient:** measures the degree a person's connections are connected to each other.

PROJECT UPDATES

Correlation Analysis

- The different centrality metrics (including unweighted vs weighted and online vs in person subsets) are all moderately correlated with each other.
- Interestingly, the correlation between belonging barometer and these metrics is very weak and sometimes not significant.
- There is a significant small negative correlation ($\rho = -0.12$) between belonging barometer and time spent online.

PROJECT UPDATES

Who are the leaders?

Teachers Lead in Eigenvector Centrality:

- Teachers are often connected to many well-connected students, placing them at the core of the school's social network. Their influence comes from their widespread connections to influential students, who themselves are connected to others, amplifying the teacher's reach across the network.

Mix of Students and Teachers in Betweenness Centrality:

- Both students and teachers can have high betweenness centrality, but for different reasons. Students often bridge different social groups or cliques, while teachers may serve as intermediaries between entire classes or groups of students.

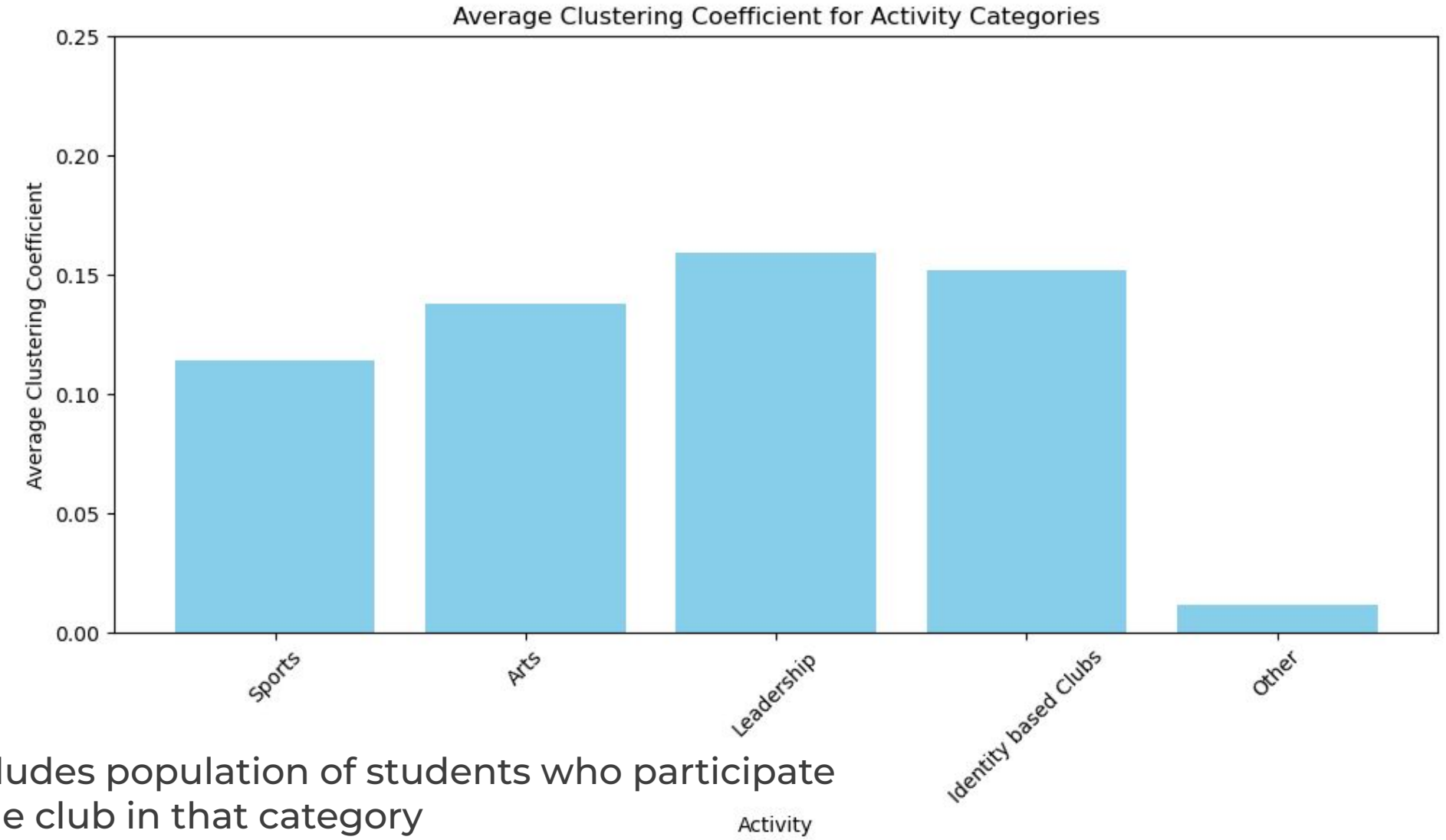
PROJECT UPDATES

Activities:
Top activities & activity categories by average clustering coefficient (level of connectedness between members)

Activity	Average Clustering Coefficient
Sources of Strength	0.295652
Leadership (ASB)	0.295363
GSA	0.248148
Band	0.168947
Leadership	0.159475
Club Softball	0.157895
Identity based Clubs	0.152273
Volleyball	0.148652
Soccer	0.144444
Tennis	0.142857
Arts	0.138219
Student Council	0.121739
Color and/or Winter Guard	0.119048
Sports	0.114260
Football	0.101917
Choir	0.094017

PROJECT UPDATES

High vs Low Belonging Analysis



Each bar includes population of students who participate in at least one club in that category

PROJECT UPDATES

Top activities by average centrality metrics

	betweenness	eigenvector	indegree	outdegree	Belonging Barometer Number
1	Panthera Leo/Journalism	Leadership (ASB)	Leadership (ASB)	Panthera Leo/Journalism	Geography Club
2	Debate Club	Student Council	Lion Crew	Homework Club	Leadership (ASB)
3	Homework Club	Lion Crew	Student Council	Sources of Strength	National Honor Society
4	Sources of Strength	Environmental Club	National Honor Society	Leadership (ASB)	Lion Crew
5	GSA	National Honor Society	GSA	Student Council	Track

Additionally, there are small positive significant correlations between these metrics and how many activities a student listed.

PROJECT UPDATES

More Terminology

Degree Centrality – students with most direct connections; considered most popular

This can give clues about social hierarchies where some students hole more “popularity” power. If these dynamics are harmful (e.g. bullying or exclusion), it's important to address them

Name From	Degree Centrality
Kyle Brayton	0.093446
Jeanette Johnston	0.068138
Noelle Freshner	0.066840
Olivia Beck	0.065542
Nathan Hammond	0.048670
Eric Stearns	0.047372
Alex Christian	0.042829
Katy Wagner	0.035042
Neil Ford	0.031149
Gracelynne Pense Mace	0.029202

PROJECT UPDATES

More Terminology

Betweenness Centrality – students that bridge gaps and most able to resolve conflicts or bring diverse groups together

These students will be considered bridge builders and mediators and can play a crucial role in connecting isolated groups. They may not have the most friends themselves but important to connect others who wouldn't interact.

Name From	Betweenness Centrality
Alex Christian	0.140310
Kyle Brayton	0.113975
Jeanette Johnston	0.072807
Bay Scholl	0.065116
Trisha Walker	0.061372
Nathan Hammond	0.057192
Noelle Freshner	0.055866
Gracelynne Pense Mace	0.047680
Olivia Beck	0.046421
Riann DuBois	0.046215

PROJECT UPDATES

More Terminology

Closeness Centrality – students considered key influencers where information spreads fast

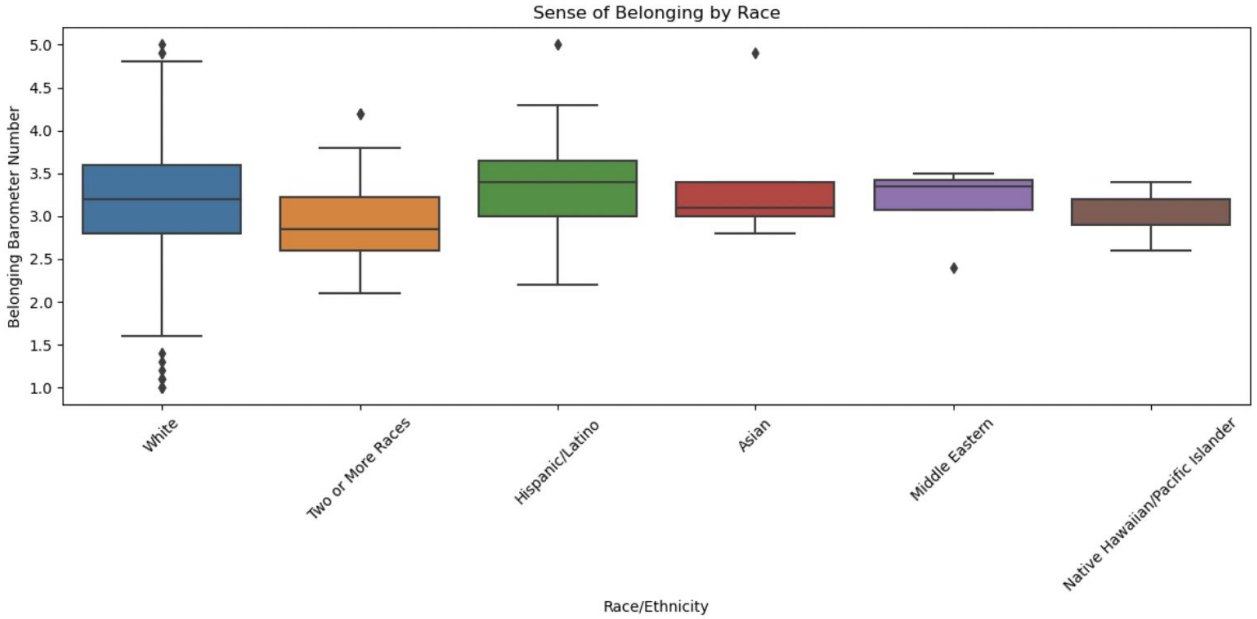
Students that can quickly communicate with or access all other students. They are at the center of the network in terms of distance, making them well positioned to spread information or influence others quickly.

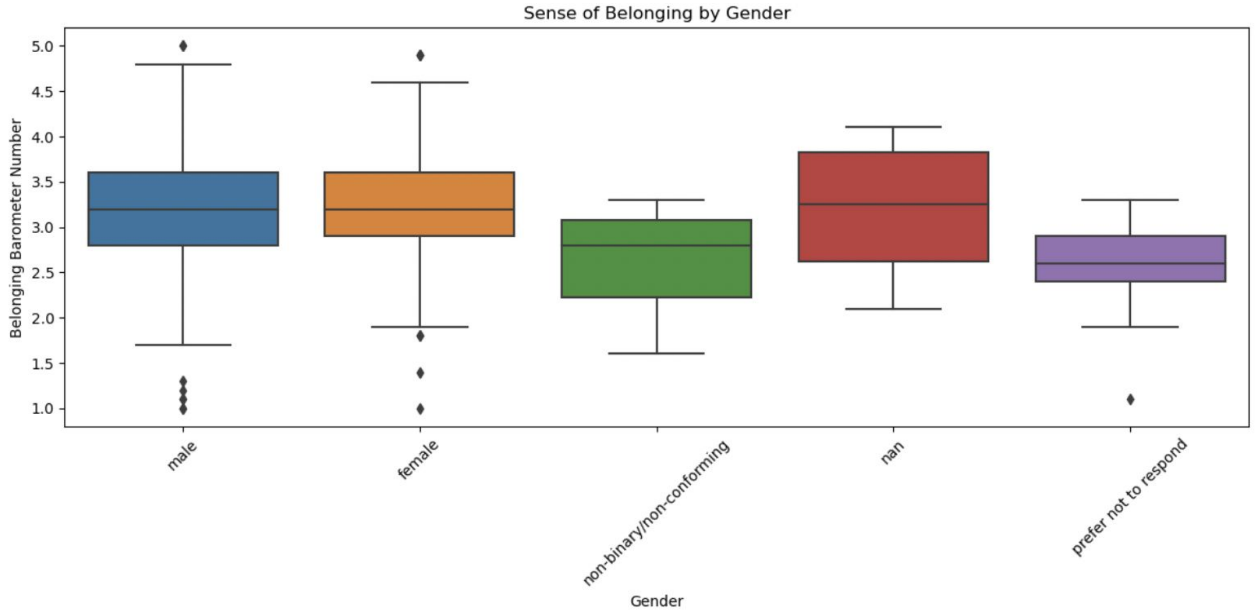
Name From	Closeness Centrality
Jeanette Johnston	0.315678
Noelle Freshner	0.315482
Bay Scholl	0.308650
Alex Christian	0.307097
Eric Stearns	0.306788
Kyle Brayton	0.305742
Katy Wagner	0.301809
Nathan Hammond	0.299674
Olivia Beck	0.299498
Mark McQueen	0.299028

PROJECT UPDATES

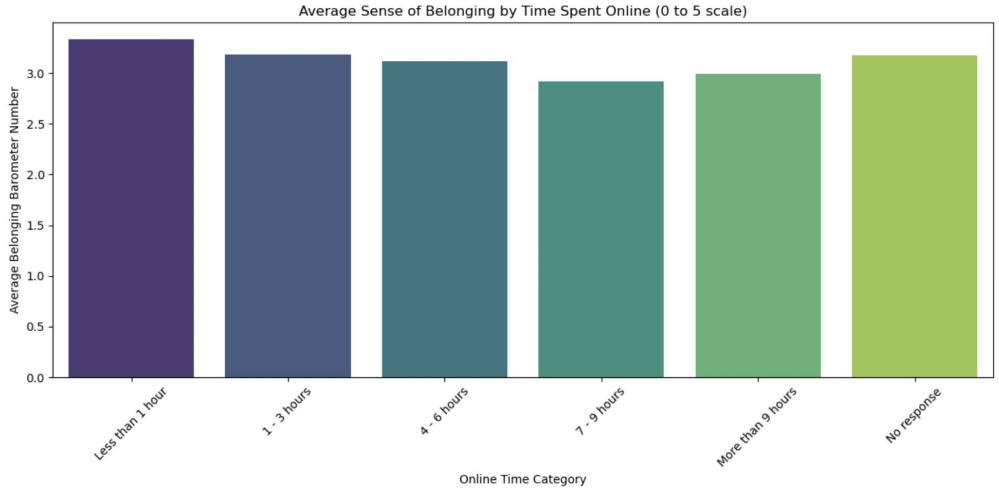
Use Story : Belonging and Demographics

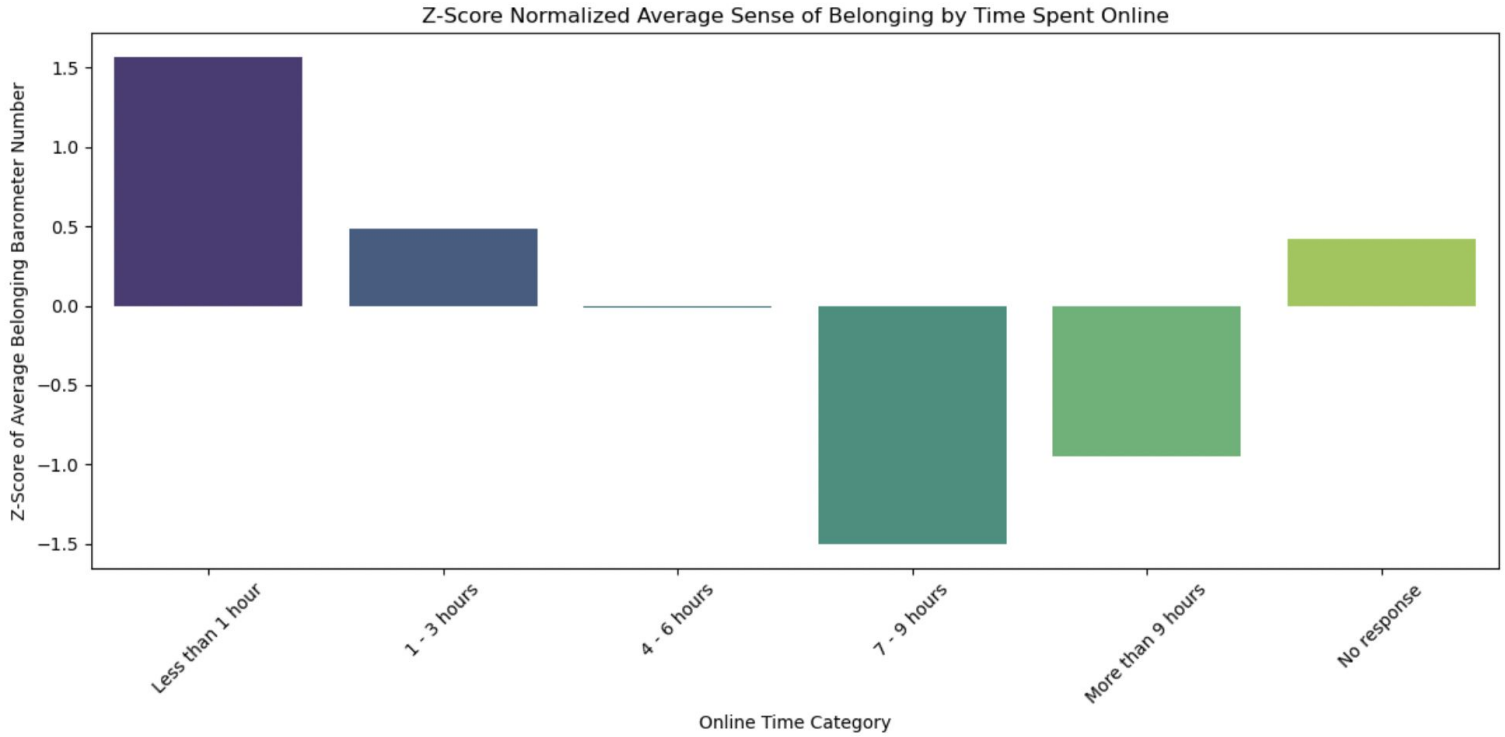
- **Correlation between Students' sense of belonging and different Demographics features**





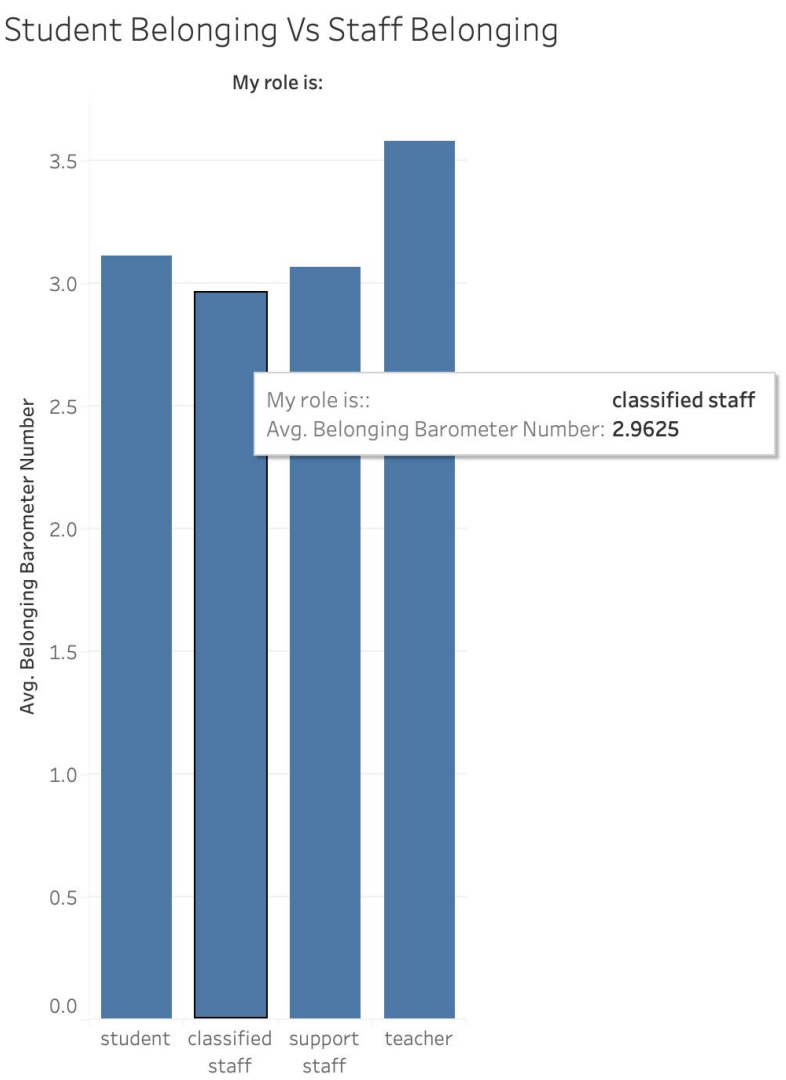
PROJECT UPDATES

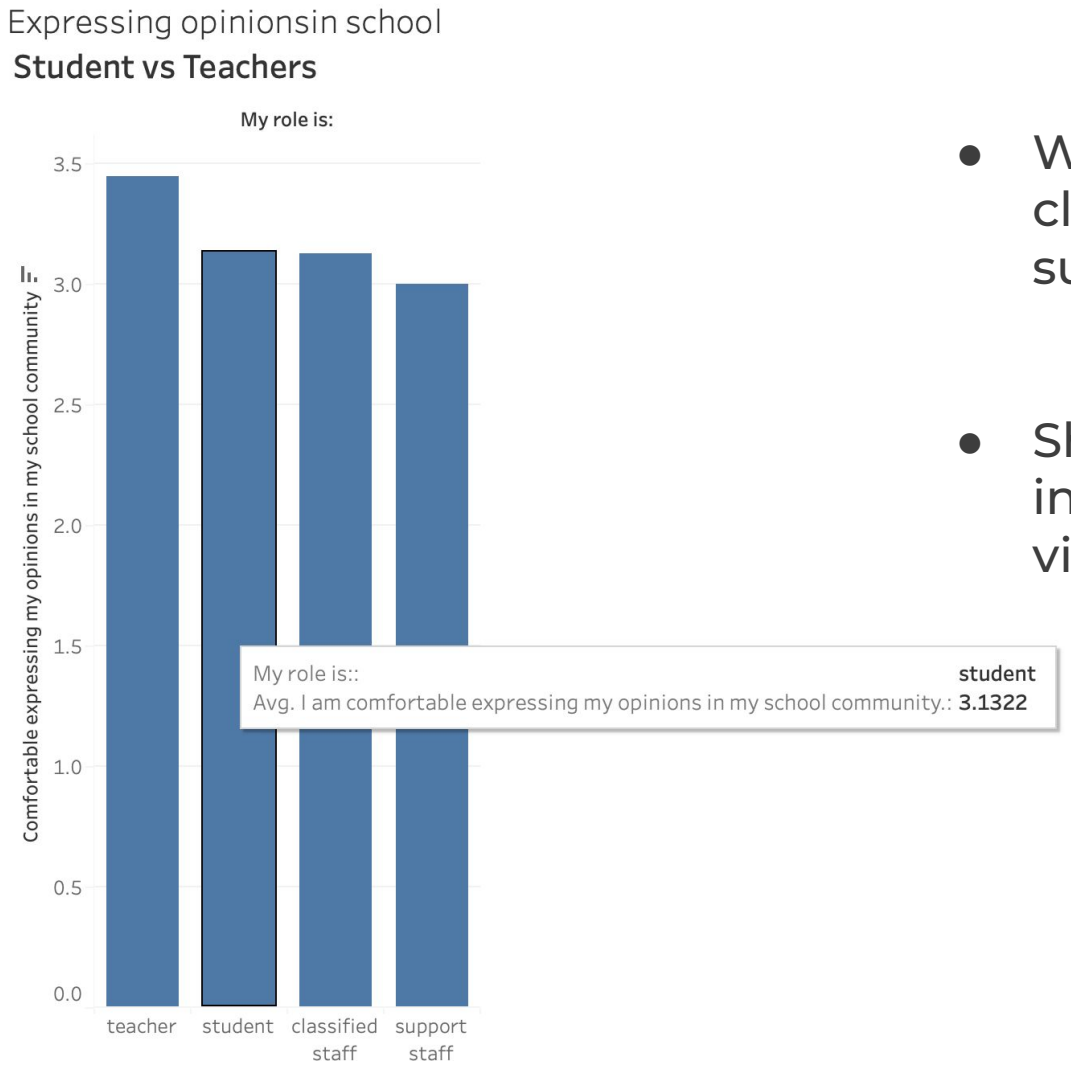




PROJECT UPDATES

Student vs Adult Belonging





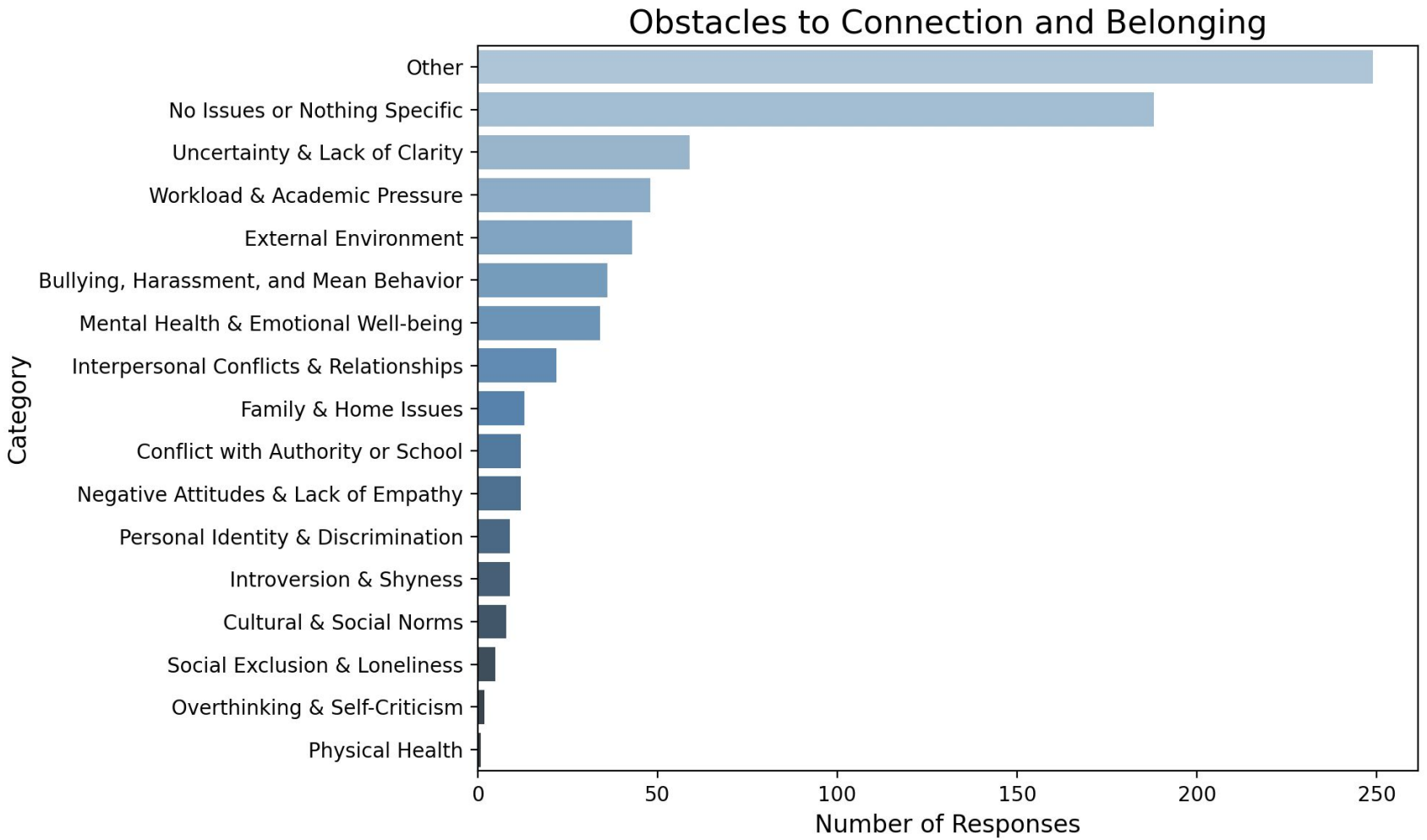
- Who do you consider classified staff and support staff?
- Should they be included in visualizations

PROJECT DELIVERABLES

Student vs Adult Belonging

My role is:	What obstacles prevent you from experiencing connection and belonging?
student	im not sure
student	Nothing
student	People bullying
student	bad grades
student	not being given the information ahead of time
student	nothing
student	nothing
student	None
student	idk
student	staff
student	none
student	Suicidal thoughts, Depression, Anxiety, Attachment issues, Trust issues.
student	Self-doubt insecurities
teacher	The amount of work expectations placed on our profession makes it difficult to take time to really get to connect with others on the staff.
student	Mean girls, people not being welcoming.

- ways to categorize students written response
- how would you like me to categorize?
  - Mental Health
  - Social Interactions
  - External Factors
  - Cultural Issue
  - No responses



Student vs Adult Belonging

- How would you like me to further breakdown Other?
- Went through student and staff response, and found unique response, even within this unique response there are 500 categories.

BLOCKERS/QUESTIONS

- How interconnected are middle and high school students? Should they be treated as separate populations or one large network (current approach)
- Suggestion from professor: postpone developing a student facing tool for next semester's cohort to complete. We can focus on laying the groundwork through aggregate statistics and visualizations of user story questions.

NEXT STEPS

- We will continue to refine our analysis based on questions brought up in this meeting
- We will begin to draft the white paper / report deliverable addressing the user stories with aggregate statistics.

Thank you!