Kent ISD

MI Student Voice Perception Survey – Student Engagement Brief

Basis Policy Research September 2023

This research brief uses data from the spring 2023 administration of the MI Student Voice perception survey to examine the connection between the school environment and students' academic engagement.

Key findings include:

- Students reporting positive learning environments are almost five times as likely to report strong academic engagement as compared to students reporting negative learning environments.
- Students feeling more connected to peers and reporting a fairer and more inclusive environment are between 2 to 2.5 times more likely to report strong academic engagement as compared to students feeling less connected and perceiving a less fair and inclusive environment.
- Non-binary or third gender and high school students less likely to report feeling connected to peers as compared Female or younger students.

Recommendations include:

- Develop and implement discipline policies that treat all students fairly.
- Prioritize strategies that promote academic engagement for high school students.
- Use the Kent ISD Student Perception Planning Guide when analyzing district- and school-level results.
- Implement district-/school-wide frameworks for building positive relationships with students.

Introduction

What is student engagement?

Student engagement comprises intellectual urgency, emotional resonance, perspective bending, and sense of the aesthetic. The Kent Intermediate School District (Kent ISD) Teaching and Learning Department defines these four components as follows:

- Engagement is born of ***intellectual urgency***. Engaged children often tell us through talk and action that they "*have* to know more about" a topic. They are willing to put time and considerable effort into learning more. They drive the learning with their own questions. Often, conflict is embedded in the experiences, concepts, and stories in which children are deeply engaged. We're drawn to conflict and lean toward a resolution. Children are intrigued by conflict and may want to act to mitigate a problem in their community or the world. They believe that they just *have* to apply more attention to this text or idea.

- Engagement is often born of an ***emotional resonance*** to ideas—engaged children can describe experiences when a concept is imprinted in the heart as well as the mind. They are far more likely

to remember the idea when a strong emotion is tied to a concept they're learning or a text they're reading. They may want to share their emotional reactions through writing, conversation, or art.

- Engagement is deepened by ***perspective bending***—engaged children are aware of how others' knowledge, emotions, and beliefs shape their own. When children talk and write about their beliefs, they are more engaged; they have a stake in their learning. They may be open to changing their thinking or beliefs when challenged and particularly relish the idea that their ideas can impact other learners. Their beliefs may bend, but rarely break.

- Engagement is often connected to a learner's ***sense of the aesthetic***—engaged children can describe moments when they find something beautiful or extraordinary, captivating, hilarious, or unusually meaningful. They may speak of a book or illustration, a painting, or an idea in science or math that seems to have been created just for them. They are drawn back to view it, discuss it, read it again and again. They claim the idea as somehow their own.

Why is student engagement important?

Students are more likely to experience positive academic outcomes, including higher grade point averages, higher standardized test scores, and increased postsecondary enrollment, when they are motived and engaged in school (Finn & Zimmer, 2012; Fredericks et al., 2016; Klem & Connell, 2004). For instance, Fraysier and colleagues (2020) found that secondary students with stronger cognitive (i.e., beliefs towards schooling) and affective (i.e., sense of belonging in school) engagement were more likely to matriculate to a postsecondary institution and complete the first year as compared to students who were less engaged. In contrast, disengaged secondary students are more likely to display problematic behaviors, including increased substance use and dropping out of school (Wang & Fredericks, 2014).

How can schools support student engagement?

Creating positive and engaging experiences for students is a promising approach to improving the academic performance of all learners (Appleton et al. 2008). Prior research has shown that students are more engaged in schools with positive and welcoming environments (Konold et al., 2019). For instance, Wang and Eccles (2013) found students' perception of the school environment (e.g., having voice in decision-making, the perceived relevance of instruction and content, and feeling connected to teachers and peers) is associated with increased behavioral, emotional, and cognitive engagement. Consequently, improving the school environment remains a prominent component of continuous improvement initiatives (Caskey et al., 2016).

Given the importance of engagement on students' academic performance and the influence of the school environment on student engagement, the MI Student Voice survey included both engagement and school environment-focused questions on the statewide perception survey. The questions gauge students' academic engagement and perceptions of the school environment. Kent ISD, through a grant funded from the Michigan Health Endowment Fund, contracted with Basis Policy Research (Basis) to analyze survey results and produce three research briefs covering topics of interest to Kent ISD. The current brief explores the relationship between the school environment and academic engagement. Findings from this brief will inform local district implementation and reinforcement of social-emotional related instruction and interventions.

Research Questions

This research brief examines the following research questions:

1. How do Michigan students perceive their own academic engagement? How do these perceptions differ by gender, race/ethnicity, or grade-level?

2. To what extent does the school environment promote students' academic engagement?

Methods

Sample. This research brief draws on data from the spring 2023 administration of the MI Student Voice perception survey. Fifty-six districts in Michigan participated in the survey. At the conclusion of the survey window, 33,233 students in grades 5 through 12 completed the survey. We restricted the sample to 26,990 students who had non-missing district and school data and who had completed all survey questions. The sample of students included in this report are enrolled in 50 districts across Michigan. Appendix A describes the sample, including response rates by participating districts.

Measures. This research brief uses concepts or constructs (henceforth titled "factors") derived from the MI Student Voice perception survey validation report. In the validation report, Basis researchers applied an exploratory factor analysis (EFA) to examine patterns in students' survey responses. This statistical technique explores relationships between survey items and groups items with common themes into underlying factors. Factors derived from an EFA include multiple questions that "hang together" because of similar patterns of responses. For example, students' sense of belonging in school is a factor one cannot measure directly. However, one can measure whether students feel (a) connected to peers, (b) understood by peers, and (c) like they belong in school. The items all relate to the underlying factor of "peer connectedness". The four factors derived from the validation report and used in this research brief include:

- **Learning Environment:** Survey items associated with this factor include teachers' respect towards students, teachers' encouragement of students, the adequacy of resources schools provide, the time teachers take to help students understand the material, and how excited students would be to have their teachers again (See Appendix B, Table B1 Rows 2-11).

- **Peer Connectedness:** Items related to this factor inquire about how connected students feel to other students, how well peers understand them, and how strongly students feel like they belong in school (See Appendix B, Table B1, Rows 13-15).

- **Academic Engagement:** Survey items associated with this factor include how efficiently students complete work, the amount of effort students put into paying attention in class, the amount of effort students put into learning the material, and whether students come prepared for class (See Appendix B, Table B1, Rows 21-24).

- **Fair and Inclusive Environment.** The two items related to this factor inquire about whether adults and students fairly treat people from different races, ethnicities, or cultures (See Appendix B, Table B1, Rows 39-40).

We recognize that student engagement is a multi-dimensional construct that includes more than academic engagement (e.g., behavioral, cognitive, and affective) (Appleton et al., 2008). However, for the purposes of this brief, we focus the analysis on academic engagement given the grouping of items from the EFA.

Analytic Strategy. Below we describe the analytic strategy used to answer the research questions included in this brief.

RQ 1 | How do Michigan students perceive their own academic engagement? How do these perceptions differ by gender, race/ethnicity, or grade-level?

Basis researchers employed a three-step approach to answer this research question. First, we constructed a measure of academic engagement. We classified students as reporting strong academic engagement (4 items) if they selected the top two answer choices (e.g., "agree or strongly agree", "quite or extremely", "frequently or almost always") on at least half the survey items associated with this measure.

Second, we explored descriptive trends in the percentage of students reporting strong academic engagement. Finally, we used logistic regression to determine whether different student subgroups (e.g., gender, race/ethnicity, grade-levels) were more likely to report strong academic engagement. We use predicted probabilities and odds ratios to report on results from the logistic regressions models. More details on the methods along with results of the logistic regression analyses are provided in Appendix A.

RQ 2 | To what extent does the school environment promote students' academic engagement?

We employed a three-step approach to answer this research question. First, we constructed measures of positive learning environments, peer connectedness, and fair and inclusive environments. For the purposes of this report, these three measures represent different aspects of the overall school environment. We classified students as experiencing positive learning environments (10 items), feeling more connected to peers (3 items), and experiencing a fairer and more inclusive environment (2 items) if they selected the top two answer choices on at least half the survey items associated with these measures.

Second, we used logistic regression to determine whether different student subgroups (e.g., gender, race/ethnicity, grade-levels) were more likely to report positive learning environments, feeling more connected to peers, and experiencing a fairer and more inclusive environment. We use predicted probabilities and odds ratios to report on results from the logistic regressions models. Finally, we ran additional logistic regressions models to determine whether experiencing a positive learning environment, feelings more connected to peers, and experiencing a fairer and more inclusive environment were significant predictors of reporting strong academic engagement after controlling for student demographics.

Results

RQ 1 | How do Michigan students perceive their own academic engagement? How do these perceptions differ by gender, race/ethnicity, or grade-level?

This section compares the likelihood that different student subgroups report strong academic engagement. We use the predicted probability and odds ratio estimates from a series of multivariate logistic regression models to answer this research question.

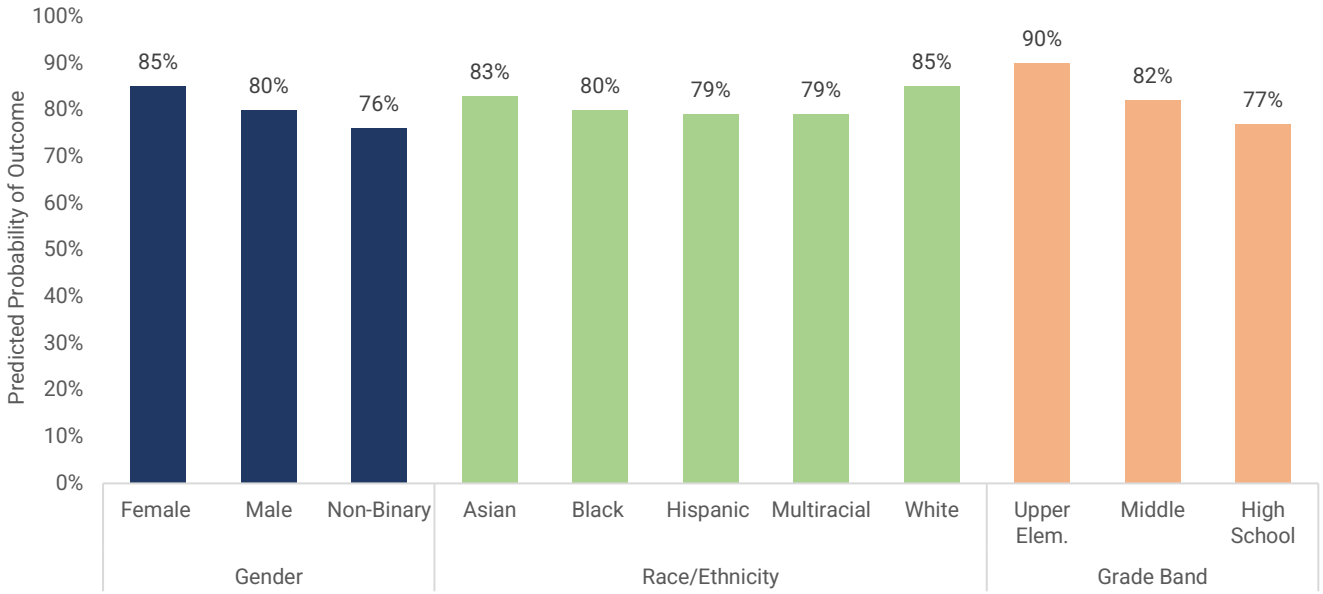
Eighty percent of students report strong academic engagement.

Eighty percent of students participating in the MI Student Voice perception survey (n=26,990) reported strong academic engagement. Of the items comprising academic engagement, 82 percent reported frequently coming to class prepared while between 74 to 76 percent of students reported consistently putting effort into paying attention in class and learning at school. We also found that 44 percent of students rarely wait until the last minute to get work finished. Further, we do not report on year over year trends in the percentage of students reporting strong academic engagement due to the measure in the respective years including different survey items. Finally, we include descriptive statistics of students reporting strong academic engagement by gender, race/ethnicity, and grade-level in Appendix B, Table B2.

Female, White, and Asian students are more likely to report strong academic engagement.

Figure 1 displays the predicted probability that different student subgroups would report strong academic engagement. The colored bars represent the predicted probability of reporting strong academic engagement for students by gender (blue bars), race and ethnicity (green bars), and grade-level (orange bar) categories. Results in Figure 1 reveal that female, White, and Asian students are more likely to report strong academic engagement. For instance, the predicted probability that Female students would report strong academic engagement is 87 percent as compared to 82 percent for Male or non-binary students. Consequently, Male and non-binary students are between one-half to two-thirds as likely to report strong academic engagement as compared to Female students (see Appendix C, Figure C1). Additionally, the predicted probability of White and Asian students reporting strong academic engagement is between 83 to 85 percent as compared to between 79 to 80 percent for Hispanic or Latinx (henceforth titled “Hispanic”), Black or African American (henceforth titled “Black”), and multiracial students. These students are approximately two-thirds as likely to report strong academic engagement as compared to White students. Results also reveal that the predicted probability of reporting strong academic engagement is 90 percent for upper elementary students as compared to between 77 and 82 percent for middle and high school students. Middle and high school students are between one-third to one-half as likely to report strong academic engagement as compared to upper elementary students (see Appendix C, Figure C1).

Figure 1: The predicted probability of reporting strong academic engagement for different student subgroups.



Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

RQ 2 | To what extent does the school environment promote students' academic engagement?

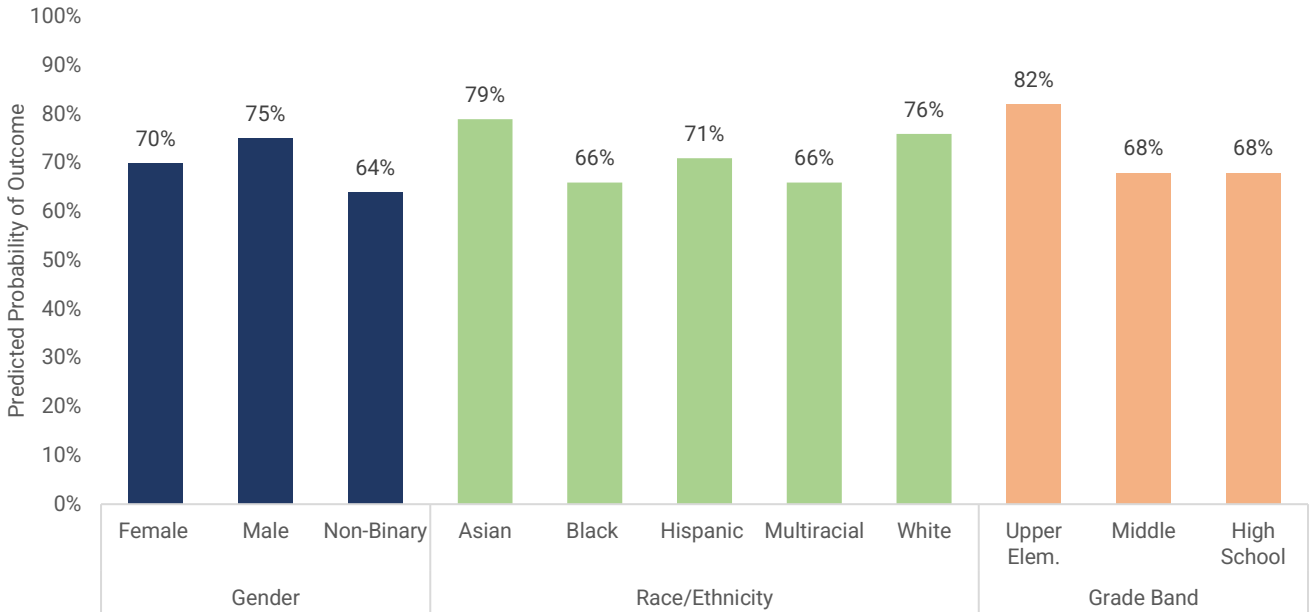
We answer this research question in two parts. First, we compare the likelihood that different student subgroups report positive learning environments, feeling more connected to peers, and fairer and more inclusive environments (see Appendix B, Table B2 for descriptive statistics). We use these measures as components of the broader concept of school environment. We then tested whether these different aspects of the school environment were statistically significant predictors or whether or not students report strong academic engagement. We use the predicted probability and odds ratio estimates from a series of multivariate logistic regression models to answer this research question (see Appendix B, Table B3 for complete results).

Black, multiracial, and Hispanic students are less likely to report positive learning environments.

Figure 2 displays the predicted probability that different student subgroups report experiencing positive learning environments. The interpretation of results for gender (blue bars), race/ethnicity (green bars), and grade-level (orange bars) subgroups in Figure 2 is the same as the aforementioned section. Results in Figure 2 indicate that the predicted probability of White and Asian students reporting positive learning environments is between 76 to 79 percent as compared to between 66 to 71 percent for Black, multiracial, and Hispanic students. This translates into Black, multiracial, and Hispanic students being almost two-thirds as likely to report positive learning environments as compared to White students (see Appendix C, Figure C2). We also find that male students (75 percent) are more likely to report positive learning environments as compared to female (70 percent) and non-binary or third gender students (64 percent). Consequently, male students are 1.3 times more likely to report positive learning environments as

compared to female students (see Appendix C, Figure C2). Finally, upper elementary students (82 percent) are more likely to report positive learning environments as compared to middle (68 percent) and high school (68 percent) students. This translates into middle and high school students being approximately one-half as likely to report positive learning environments as compared to upper elementary students (see Appendix C, Figure C2).

Figure 2: The predicted probability of reporting positive learning environments for different student subgroups.



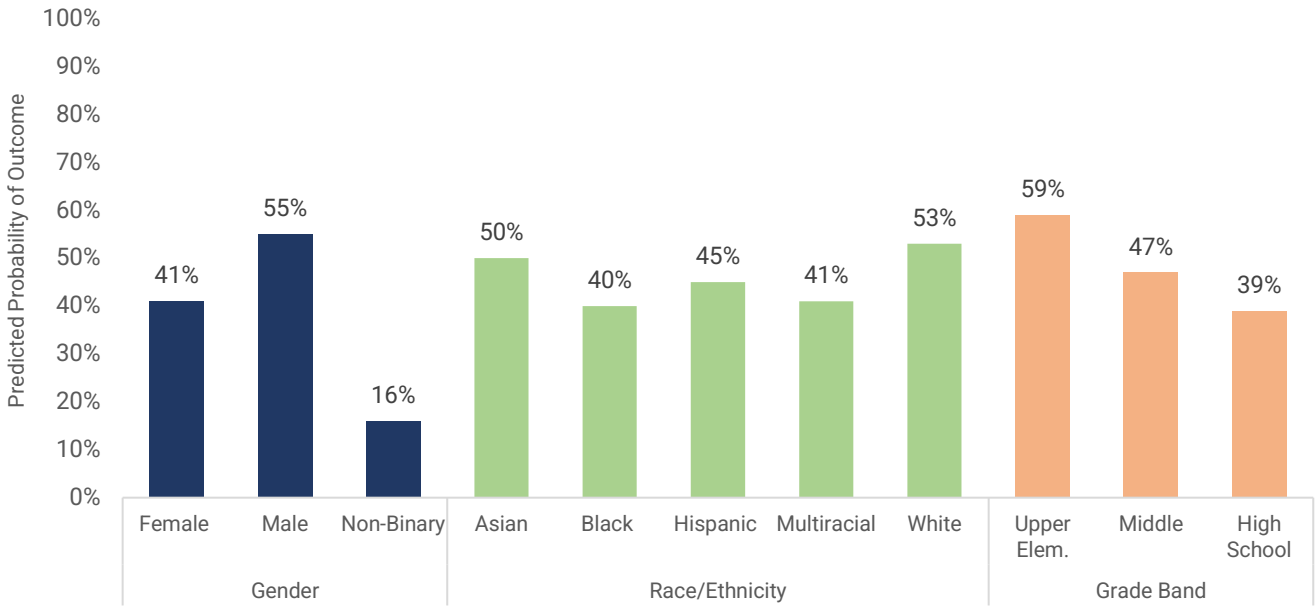
Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Non-binary or third gender and high school students are less likely to report feeling connected to peers.

Figure 3 displays the predicted probability that different student subgroups report feeling more connected to peers. The interpretation of results for gender (blue bars), race/ethnicity (green bars), and grade-level (orange bars) subgroups in Figure 3 is the same as the aforementioned section. Results in Figure 3 indicate that the predicted probability of White and Asian students reporting feeling more connected to peers is between 50 to 53 percent as compared to between 40 to 45 percent for Black, multiracial, and Hispanic students. This translates into Black, multiracial, and Hispanic being approximately two-thirds as likely to report feeling more connected to peers (see Appendix C, Figure C3). We also find that non-binary or third gender students (16 percent) are less likely to report feeling more connected to peers as compared to female (41 percent) or male (55 percent) students. Consequently, non-binary or third gender students are about one-third as likely to report feeling more connected to peers as compared to female students (see Appendix C, Figure C3). Finally, upper elementary students (59 percent) are more likely to report feeling connected to peers as compared to middle (47 percent) and high school (39 percent) students. This translates into middle and high school students being between two- to three-fifths as likely

to report feeling more connected to peers as compared to upper elementary students (see Appendix C, Figure C3).

Figure 3: The predicted probability of feeling more connected to peers for different student subgroups.

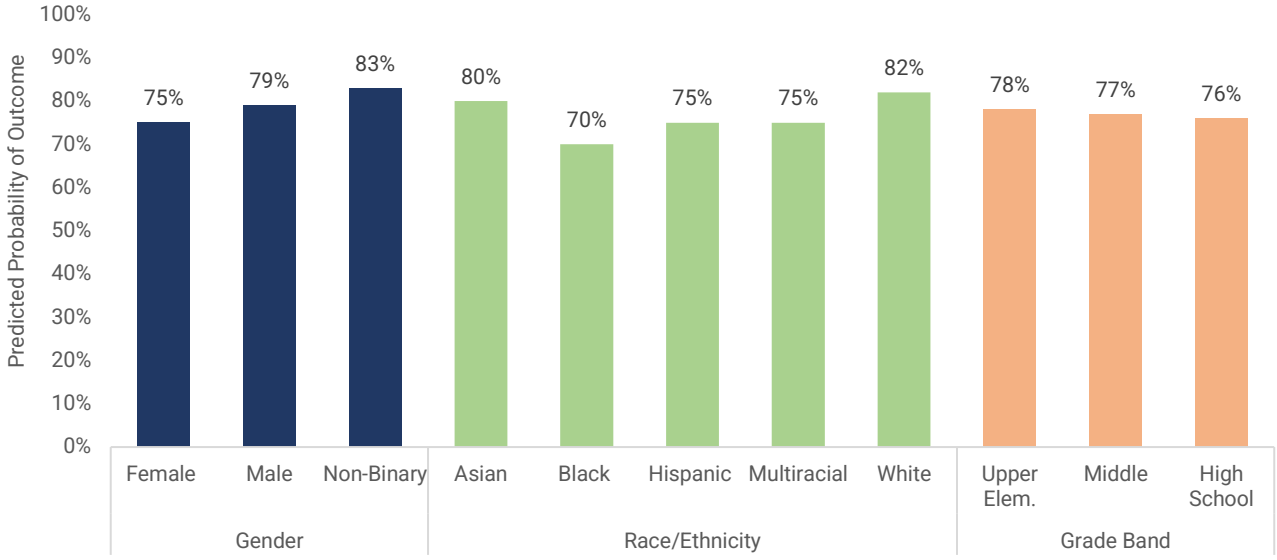


Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Black students are less likely to report experiencing a fairer and more inclusive school environment.

Figure 4 displays the predicted probability that different student subgroups report experiencing a fairer and more inclusive school environment. The interpretation of results for gender (blue bars), race/ethnicity (green bars), and grade bands (orange bars) subgroups in Figure 4 is the same as the aforementioned sections. Results in Figure 4 indicate that the predicted probability of Black students reporting a fairer and more inclusive school environment is 70 percent as compared to between 75 to 82 percent for all racial or ethnic groups. Further, this translates into Black students being approximately one-half as likely to report experiencing a fairer or more inclusive school environment as compared to White students (see Appendix C, Figure C4). We also find that female students (75 percent) are less likely to report experiencing a fairer and more inclusive environment as compared to male (79 percent) and non-binary or third gender students (83 percent). Consequently, non-binary or third gender and male students are between 1.2 and 1.6 times more likely to report experiencing a fairer and more inclusive environment as compared to female students (see Appendix C, Figure C4). Finally, we find minimal difference in the predicted probability of reporting experiencing fairer and more inclusive environments across grade bands.

Figure 4: The predicted probability of experiencing a fairer and more inclusive school environment for different student subgroups.

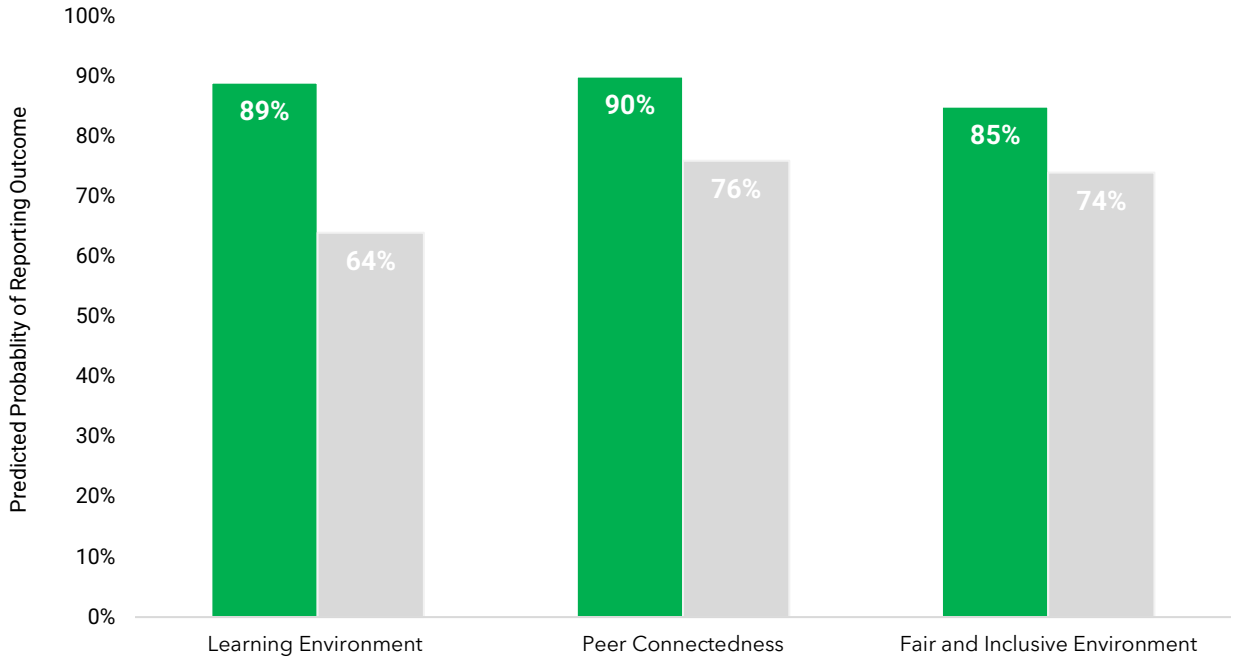


Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Positive learning environments increase the likelihood of academic engagement.

Figure 5 displays the predicted probability of reporting strong academic engagement for students reporting (a) positive learning environments, (b) feeling more connected to peers, and (c) fairer and more inclusive environments. The green bars display the predicted probability for students responding positively in these areas while the grey bars display the predicted probability for students responding negatively in these areas. Results indicate that students who report positive learning environments are more likely to report strong academic engagement as compared to their peers who report negative learning environments. The predicted probability of reporting strong academic engagement is 89 percent for students who report positive learning environments as compared to 64 percent for students who report negative learning environments (see Figure 5 below). Consequently, students reporting positive learning environments are almost five times as likely to report strong academic engagement (see Appendix C, Figure C5); these results were statistically significant. Similarly, the predicted probability of reporting strong academic engagement is between 85 to 90 percent for students who report fairer and more inclusive environments and feeling more connected to peers. These students are between 2 to 2.8 times more likely to report strong academic engagement as compared to students who report less fair and inclusive environments and feeling less connected to peers (see Appendix C, Figure C5); these results were also statistically significant.

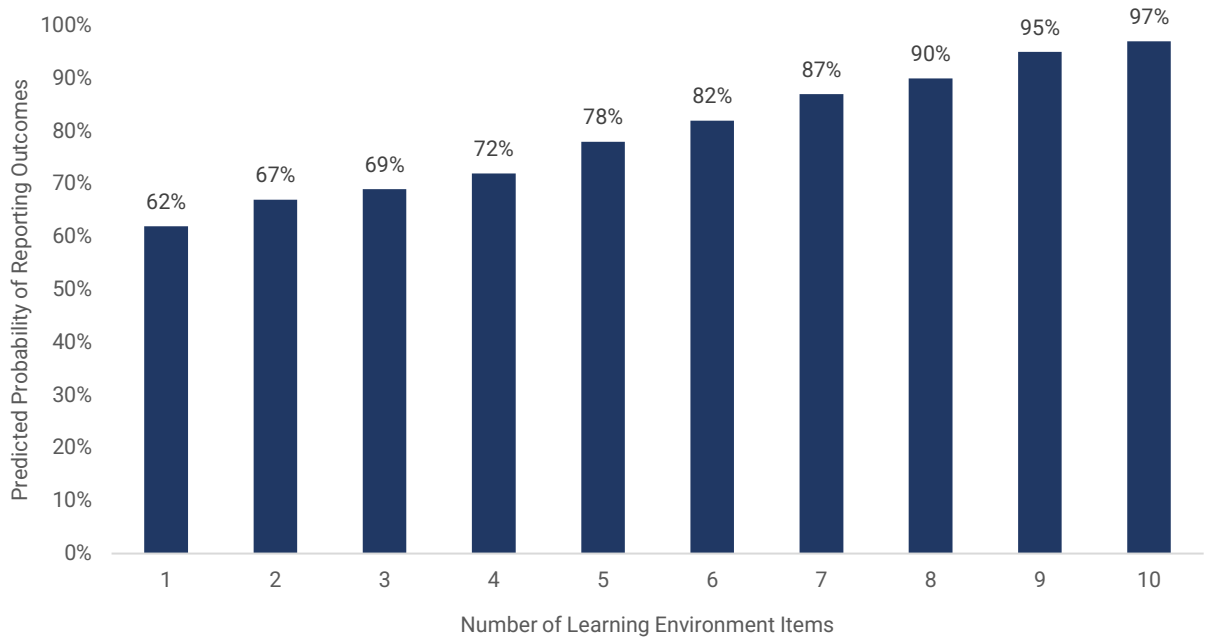
Figure 5: The predicted probability of reporting strong academic engagement for students reporting positive learning environments, feeling more connected to peers, and fairer and more inclusive environments.



Note: The probabilities show in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Alternatively, we explored whether the predicted probability of reporting strong academic engagement increases with the number of learning environment, peer connectedness, and fair and inclusive environments items to which students responded affirmatively to. Results in Figure 6 indicate that the predicted probability of reporting strong academic engagement increases with the number of learning environment items to which students respond favorably to. For instance, the predicted probability of reporting strong academic engagement for students responding favorably to a single learning environment item is 62 as compared to 97 percent for students responding favorably to all items. We find a similar relationship exists between the number of (a) peer connectedness and belonging and (b) fair and inclusive environments items students respond favorably to and the predicted probability of reporting strong academic engagement (see Appendix C, Figures 6-7).

Figure 6: The predicted probability of reporting strong academic engagement for the number of positive student-teacher relationship and school support items.



Note: The probabilities show in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Discussion and Recommendations

This research brief has sought to understand the connection between the school environment and academic engagement. We found that experiencing positive learning environments, feeling more connected to peers, and perceiving a fairer and more inclusive environment increases the likelihood that students report strong academic engagement. Students reporting positive learning environments are almost five times as likely to report strong academic engagement as compared to students reporting negative learning environments. Further, students who report feeling more connected to peers and perceiving a fairer and more inclusive environment are between 2 to 2.8 times more likely to report strong academic engagement as compared to students who feel less connected to peers and perceive a less fair and inclusive environment. While these results demonstrate the influence the school environment has on students' academic engagement, certain student groups are less likely to report positive learning environments, feeling connected to peers, and fairer and more inclusive environments. For instance, non-binary or third gender students are almost one-third as likely to report feeling more connected to peers as compared to female students. Further, Black, multiracial, and Hispanic students are almost two-thirds as likely to report positive learning environments as compared to White students. Considering these findings, we suggest Kent ISD consider the following five recommendations. The first four recommendations focus on steps districts and schools could take to close academic engagement related gaps while the final recommendation focuses on directions for future research. The final two recommendations in the district and school section were included in last year's engagement research brief but warrant inclusion here given their continued applicability.

District and School Recommendations

1 | Develop and implement discipline policies that treat all students fairly.

Students who report fairer and more inclusive environments are more likely to report strong academic engagement. However, we found that Female, Black, and Hispanic students were significantly less likely to report experiencing a fairer and more inclusive school environment as compared to Male and White students. Thus, it is imperative that districts and schools work to develop and implement policies that promote positive, fair, and support environments for all students. The United States Department of Education (2023), in their guiding principles for creating safe, inclusive, supportive, and fair school climates, recommends districts and states take the following steps to development and implement fair discipline policies and practices:

- Co-construct policies with relevant stakeholder groups (e.g., teachers, parents, families, community members) through formal (e.g., stakeholder perception survey) and informal (e.g., school meetings, feedback link on website) practices.
- Consider if a discipline policy or strategy (a) meets the needs of individual students and (b) is developmentally appropriate.
- Make sure student discipline policies and practices are accessible for all stakeholders, including students, families, and community members.
- Develop consistent two-way communication with families that is accessible for all stakeholders.
- Routinely evaluate the implementation and impact of discipline policies and practices for different student groups.
- Support students, educators, and families through implementation of evidence-based frameworks.

2 | Prioritize strategies that promote academic engagement for high school students.

The portrayal of secondary classrooms in prior research typically includes factors that impede students' academic engagement, including an emphasis whole-class instruction, less student choice, less connections to the real world or student interests, and poor student and teacher relationships (Cannata, 2013). Consequently, we find in this report that older students are less likely to report strong academic engagement as compared to younger students. To address these issues, existing literature has focused on improving academic engagement for secondary students has recommended: prioritize the development of positive relationships between students and teachers and between other students (Quin, 2017); using connective instruction practice that emotionally connects students to the teacher, content, and instruction (Cooper, 2014); designing instructional tasks that provide students the opportunity to solve problems relevant to students' interests and their communities (Marks, 2000); offering students choice and supporting student autonomy (Fredricks et al., 2019); emphasizing student growth (Pendergast & Kaplan, 2015); and connecting learning to students' current lives and future aspirations (O'Keefe, Horberg, & Plante, 2017). Further, Iver and colleagues (2020) contend that high schools' needs would benefit from professional development focused on helping students meaningfully engage in their learning. These researchers also recommend leveraging the resources and professional development modules available at the Every Graduates Center at Johns Hopkins University School of Education.

3 | Use the Kent ISD Student Perception Planning Guide when analyzing district- and school-level results.

Kent ISD developed a Student Perception Planning Guide for districts and schools to use when analyzing local survey results. The planning guide provides guiding questions, recommended resources, and Kent ISD technical assistance associated with student engagement. Districts and schools could use the guiding questions when analyzing student engagement-related survey data to consider *why* certain results are present in the data. For instance, if high school students are less likely to report strong academic engagement, a district could use the guiding questions to consider "how is student engagement prioritized at the secondary level?" Depending on how a district responds to this question, they could consult the recommended resources section of the planning guide or consult Kent ISD technical assistance when developing a strategy to address this gap in the data.

4 | Implement district-/school-wide frameworks for building positive relationships with students.

Research indicates that students are more motivated and engaged in learning when they have strong relationships with their teachers (Ryan, Stiller, & Lynch, 1994). Thus, we recommend districts consider implementing or continuing to implement research-based interventions or frameworks that dedicate time for teachers to prioritize developing authentic and meaningful relationships with students. Additionally, districts and schools could encourage K-8 teachers to participate in Kent ISD's Ignite Engagement professional learning initiative focused on (1) supporting students in learning how to engage, (2) creating the conditions to ensure true engagement happens, and (3) helping student learning to re-engage in their learning. Additionally, Kent ISD can partner with schools demonstrating strong student-teacher relationships and either develop case studies or a toolkit to disseminate countywide and serve as a resource for districts and schools working to improve teacher student relationships.

Future Research Recommendations

5 | Consider adding additional items associated with student engagement.

One limitation of the current report is the measure used to assess student engagement – academic engagement – does not fully capture all the elements of this construct. For instance, Appleton et al. (2008) perceives student engagement as a multi-dimensional construct that encompasses academic (e.g., time on task, engagement in class activities), behavioral (e.g., attendance, participating in school activities), cognitive (e.g., perceived relevance of coursework), and affective (e.g., identification with school, sense of belonging). Thus, a more comprehensive measure of student engagement would also include items related to behavioral, cognitive, and affective engagement. Thus, we recommend the survey team consider the items needed to fully capture student engagement, crosswalk this with the items currently included in the survey and include additional items as needed in future iterations of the survey.

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Appendices

Appendix A: Methods

Data Sources. This research brief draws on data from the spring 2023 administration of the MI Student Voice perception survey. The Kent Intermediate School District (Kent ISD) developed the survey using validated items from publicly available instruments. Survey items sought to inquire about students' experiences at school, including perceptions of engagement, social-emotional learning, and belonging. Appendix D includes a copy of the survey instrument. Kent ISD administered the survey through Qualtrics.

Sample. Fifty-six districts in Michigan administered the survey in spring 2023. At the conclusion of the survey window, 33,233 students in grades 5 through 12 completed the survey. Table A1 provides an overview of survey responses by participating district. We restricted the sample to 26,990 (81 percent of responses) students with non-missing district and school data and completed all survey questions. The analytic sample by district ranged from 0 to 95 percent of students completing the survey.

Table A1: Survey Responses by Participating Districts

District Name	Full Sample	Analytic Sample	% Analytic Sample
Advanced Technology Academy	96	60	63%
Avondale School District	1,333	1,192	89%
Beecher Community School District	43	36	84%
Berrien Springs Public Schools	374	0	0%
Buchanan Community Schools	353	312	88%
Caledonia Community Schools	741	626	84%
Coloma Community Schools	379	345	91%
Comstock Park Public Schools	123	117	95%
Countryside Academy	172	144	84%
Dansville Schools	260	226	87%
Dearborn Heights School District #7	472	412	87%
Decatur Public Schools	130	123	95%
Detroit Edison Public School Academy	492	442	90%
East Lansing School District	398	358	90%
Eau Claire Public Schools	255	236	93%
Flint Cultural Center Academy	92	75	82%
Garden City Public Schools	624	527	84%
George Washington Carver Academy	20	17	85%
Godfrey-Lee Public Schools	320	278	87%
Godwin Heights Public Schools	252	205	81%
Gogebic-Ontonagon ISD	65	0	0%
Grand Blanc Community Schools	1,367	1,235	90%
Grand Rapids Public Schools	3,807	3,332	88%
Grandville Public Schools	1,428	0	0%
Grosse Ile Township Schools	531	488	92%
Henry Ford Academy	341	312	91%
International Academy of Flint	168	140	83%
Kelloggsville Public Schools	415	351	85%
Kenowa Hills Public Schools	1,120	986	88%

District Name	Full Sample	Analytic Sample	% Analytic Sample
Kent City Community Schools	207	171	83%
Kent ISD	233	217	93%
Kentwood Public Schools	4,083	3,553	87%
Madison Academy	130	115	88%
Maple Valley Schools	173	157	91%
Martin Public Schools	70	63	90%
Mason Public Schools (Ingham)	1,396	1,197	86%
New Paradigm College Prep	32	23	72%
New Paradigm Glazer-Loving Academy	42	34	81%
Northview Public Schools	1,201	1,093	91%
Redford Union Schools, District No. 1	561	484	86%
Rockford Public Schools	931	815	88%
Romulus Community Schools	463	377	81%
South Lake Schools	370	310	84%
South Redford School District	890	788	89%
Sparta Area Schools	164	0	0%
Summit Academy North	518	461	89%
Taylor School District	424	335	79%
The New Standard Academy	228	194	85%
Thornapple Kellogg School District	268	240	90%
Van Buren Public Schools	572	515	90%
Walkerville Public Schools	22	0	0%
Watervliet School District	182	159	87%
West Shore Educational Service District	228	216	95%
Westwood Community School District	427	0	0%
Wyandotte, School District of the City of	1,543	1,382	90%
Wyoming Public Schools	1,704	1,516	89%
Total	**33,233**	**26,990**	**81%**

The percentage of students in grades 5 to 12 ranges from between 8 to 16 percent of the sample. Ninety percent of students identify as male or female while seven percent preferred not to answer or left the response blank. Further, 38 percent of students in the analytic sample are White while Hispanic, Latinx, or Spanish origin, multiracial, and Black or African Students comprise 46 percent of the sample. Students were identified as multiracial if they selected more than one race and ethnicity included in the survey. Table A2 provides descriptive statistics for students in the analytic sample.

Table A2: Descriptive Statistics for Students in Analytic Sample

Demographic Characteristic	n count	% of Sample
Grade Level		
5th Grade	3,489	13%
6th Grade	3,149	12%
7th Grade	4,221	16%
8th Grade	3,541	13%
9th Grade	4,167	15%
10th Grade	2,846	11%
11th Grade	3,423	13%
12th Grade	2,154	8%
Gender		

Demographic Characteristic	n count	% of Sample
Female	12,220	45%
Male	12,217	45%
Non-Binary/Third Gender	328	1%
Other (Prefer to Self-Describe)	328	1%
Prefer Not to Answer	1,124	4%
Blank/Missing	773	3%
Race and Ethnicity		
American Indian or Alaska Native	215	1%
Asian or Asian American	943	3%
Black or African American	5,718	21%
Hispanic, Latinx or Spanish Origin	3,348	12%
Middle Eastern or North African	262	1%
Multiracial	3,438	13%
Native Hawaiian or Pacific Islander	35	< 1%
Other	1,336	4%
Prefer Not to Answer	1,502	6%
White	10,193	38%

Measures. This research brief uses concepts or constructs (henceforth titled "factors") derived from the MI Student Voice perception survey validation report. In the validation report, Basis researchers applied an exploratory factor analysis (EFA) to examine patterns in students' survey responses. This statistical technique explores relationships between survey items and groups items with common themes into underlying factors. Factors derived from an EFA include multiple questions that "hang together" because of similar patterns of responses. For example, students' sense of belonging in school is a factor you cannot measure directly. However, you can measure whether students feel (a) connected to peers, (b) understood by peers, and (c) like they belong in school. The items all relate to the underlying factor of "peer connectedness". The four factors derived from the validation report and used in this research brief include:

- **Learning Environment:** Survey items associated with this factor include teachers' respect towards students, teachers' encouragement of students, the adequacy of resources schools provide, the time teachers take to help students understand the material, and how excited students would be to have their teachers again (See Appendix B, Table B1 Rows 2-11).

- **Peer Connectedness:** Items related to this factor inquire about how connected students feel to other students, how well peers understand them, and how strongly students feel like they belong in school (See Appendix B, Table B1, Rows 13-15).

- **Academic Engagement:** Survey items associated with this factor include how efficiently students complete work, the amount of effort students put into paying attention in class, the amount of effort students put into learning the material, and whether students come prepared for class (See Appendix B, Table B1, Rows 21-24).

- **Fair and Inclusive Environment.** The two items related to this factor inquire about whether adults and students fairly treat people from different races, ethnicities, or cultures (See Appendix B, Table B1, Rows 39-40).

Analytic Strategy. Below we describe the analytic strategy used to answer the research questions included in this brief.

RQ 1 | How do Michigan students perceive their own academic engagement? How do these perceptions differ by gender, race/ethnicity, or grade-level?

Basis researchers employed a three-step approach to answer this research question. First, we constructed a measure of academic engagement. We classified students as reporting strong academic engagement (4 items) if they selected the top two answer choices (e.g., "agree or strongly agree", "quite or extremely", "frequently or almost always") on at least half the survey items associated with this measure.

Second, we explored descriptive trends in the percentage of students reporting strong academic engagement. Finally, we used logistic regression to determine whether different student subgroups (e.g., gender, race/ethnicity, grade-levels) were more likely to report strong academic engagement. We use predicted probabilities and odds ratios to report on results from the logistic regressions models. More details on the methods along with results of the logistic regression analyses are provided in Appendix A.

RQ 2 | To what extent does the school environment promote students' academic engagement?

We employed a three-step approach to answer this research question. First, we constructed measures of positive learning environments, peer connectedness, and fair and inclusive environments. For the purposes of this report, these three measures represent different aspects of the overall school environment. We classified students as experiencing positive learning environments (10 items), feeling more connected to peers (3 items), and experiencing a fairer and more inclusive environment (2 items) if they selected the top two answer choices on at least half the survey items associated with these measures.

Second, we used logistic regression to determine whether different student subgroups (e.g., gender, race/ethnicity, grade-levels) were more likely to report positive learning environments, feeling more connected to peers, and experiencing a fairer and more inclusive environment. We use predicted probabilities and odds ratios to report on results from the logistic regressions models. Finally, we ran additional logistic regressions models to determine whether experiencing a positive learning environment, feelings more connected to peers, and experiencing a fairer and more inclusive environment was a significant predictors of reporting strong academic engagement after controlling for student demographics.

Appendix B: Additional Tables

Table B1: MI Voice Student Survey Factor Loadings

Question Text	Question Number	Factor Loading
Factor 1: Learning Environment	**Alpha = 0.89**	
Are your teachers respectful towards you?	Q_38_1	**0.88**
Do your teachers encourage you to do your best?	Q_42_1	**0.76**
Does your school provide enough resources for all students to do well?	Q_111_1	**0.75**
Do your teachers take time to make sure you understand the lesson?	Q_42_3	**0.72**
Would you be excited to have your teachers again?	Q_38_3	**0.71**
Does your school make all types of people feel welcomed and included?	Q_111_4	**0.69**
Are you given the same chances as other students to do well in school?	Q_107_4	**0.68**
Would your teachers be concerned if you walked into your class upset?	Q_38_2	**0.63**
Is your school a place where you are able to try and do your best?	Q_107_5	**0.53**
Do you feel connected to the adults at your school?	Q_52_2	**0.44**
Factor 2: Peer Connectedness	**Alpha = 0.80**	
Do you feel connected to the students at your school?	Q_52_3	**0.90**
Do people in your school understand you as a person?	Q_52_1	**0.82**
Do you feel like you belong at your school?	Q_52_4	**0.73**
Factor 3: Growth Mindset	**Alpha = 0.79**	
Do you feel like you are capable of learning anything?	Q_47_2	**0.86**
Do you feel like you can do well on all your tests, even if they are hard?	Q_47_3	**0.82**
Do you feel like you can get smarter with hard work?	Q_47_1	**0.76**
Factor 4: Academic Engagement	**Alpha = 0.71**	
Do you wait until last minute to get your work finished?	Q_50_3	**-0.80**
Do you put effort into paying attention in class?	Q_46_2	**0.76**
Do you put effort into learning at school?	Q_46_4	**0.71**
Do you come to class prepared?	Q_50_1	**0.58**
Factor 5: Social Awareness	**Alpha = 0.70**	
Do you care about other people's feelings?	Q_51_1	**0.81**
Do you think about how your actions affect others?	Q_51_3	**0.76**
Do you respect other people's point of view, even if they disagree with you?	Q_51_2	**0.71**
If you saw students or adults at your school being treated poorly because of their gender, race, ethnicity or culture, would you be willing to report it?	Q_37_2	**0.54**
Factor 6: Self-Management	**Alpha = 0.74**	
Are you able to stay calm when things are going wrong for you?	Q_49_6	**0.81**
Are you able to control your emotions when you need to?	Q_49_8	**0.79**
Are you able to stay calm when people around you are angry?	Q_49_5	**0.76**
Are you able to ignore distractions to pay attention in class?	Q_114_1	**0.47**

Factor 7: Discussions on Responsible Decision-Making and Conflict Resolution	**Alpha = 0.75**	
Do your teachers talk about how your actions affect others?	Q_41_2	**0.82**
Do your teachers talk about ways to resolve disagreements?	Q_41_1	**0.74**
Factor 8: Fair and Inclusive Environment	**Alpha: 0.76**	
Do adults at your school treat people from different races, ethnicities, or cultures fairly?	Q_31_2	**0.91**
Do students at your school treat people from different races, ethnicities, or cultures fairly?	Q_31_1	**0.90**
Factor 9: Diverse School Environment	**Alpha = 0.64**	
Do you have classes with students from different racial, ethnic, religious, or cultural backgrounds?	Q_30_1	**0.84**
Do students from different backgrounds hang out with each other at school or during school-related activities?	Q_30_2	**0.80**
Factor 10: Cultural Awareness	**Alpha = 0.54**	
Do students at your school have conversations with each other about race?	Q_27_1	**0.81**
Are you encouraged to think more deeply about race-related topics with other students at your school?	Q_27_2	**0.80**

Source: MI Student Voice perception survey; author's analysis.

Table B2: Percentage of students reporting strong academic engagement, positive learning environments, feeling more connected to peers, and fairer and more inclusive environments by student subgroups.

Sample	Academic Engagement	Positive Learning Environment	Peer Connectedness	Fair and Inclusive Environment
All	81%	71%	47%	77%
Grade Level				
Upper Elementary	89%	81%	57%	77%
Middle School	82%	68%	48%	77%
High School	76%	68%	39%	76%
Gender				
Female	65%	69%	41%	75%
Male	78%	74%	55%	78%
Non-Binary/Third Gender	80%	63%	17%	84%
Race and Ethnicity				
Asian or Asian American	82%	79%	51%	80%
Black or African American	79%	66%	41%	70%
Hispanic, Latinx or Spanish Origin	79%	71%	45%	74%
Multiracial	78%	65%	42%	75%
White	84%	75%	52%	82%

Source: MI Student Voice perception survey; author's analysis.

Table B3: The likelihood students report strong academic engagement as a function of reporting positive learning environments, feeling connected to peers, and experiencing a fairer and more inclusive environment.

	Academic Engagement					
Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Focal Predictor						
Positive Learning Environment	4.95***	4.72***				
	(0.16)	(0.16)				
Peer Connectedness			2.88***	2.79***		
			(0.10)	(0.11)		
Fair and Inclusive Environment					2.06***	2.04***
					(0.07)	(0.07)
Gender						
Male		0.63***		0.61***		0.68***
		(0.02)		(0.02)		(0.02)
Non-Binary/Third Gender		0.56***		0.66		0.50***
		(0.11)		(0.09)		(0.07)
Race/Ethnicity						
Black or African American Students		0.79***		0.76***		0.75***
		(0.04)		(0.03)		(0.03)
Multiracial Students		0.74***		0.71***		0.68***
		(0.04)		(0.04)		(0.04)
Hispanic or Latinx Students		0.71***		0.71***		0.71***
		(0.04)		(0.04)		(0.03)
Asian Students		0.77**		0.85~		0.85~
		(0.09)		(0.08)		(0.10)
Grade-Band						
Middle School		0.64***		0.57***		0.52***
		(0.03)		(0.03)		(0.03)
High School		0.44***		0.42***		0.36***
		(0.02)		(0.02)		(0.03)
Constant	1.64***	4.56***	2.89***	8.52***	2.58***	8.11***
	(0.04)	(0.25)	(0.06)	(0.47)	(0.07)	(0.47)
Observations	26,990	26,217	26,990	26,217	26,990	26,217

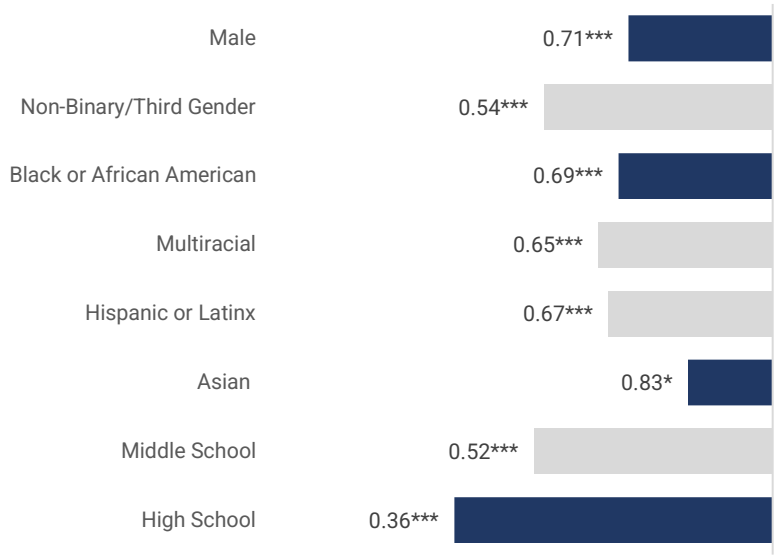
Note: The odds ratios are estimates using logistic regression models. The reference groups we compare results against include Female, White, and Upper elementary students.

[* p <.05, ** p<.01, ***p<.001]

Source: MI Student Voice perception survey; author's analysis.

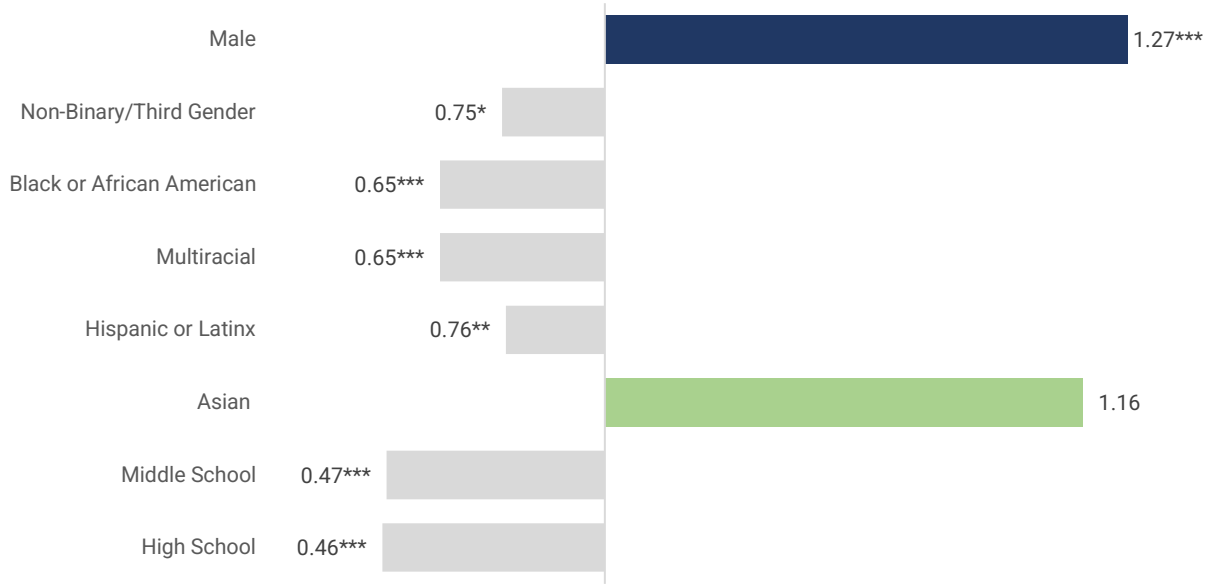
Appendix C: Additional Figures

Figure C1: The likelihood student subgroups report strong academic engagement.



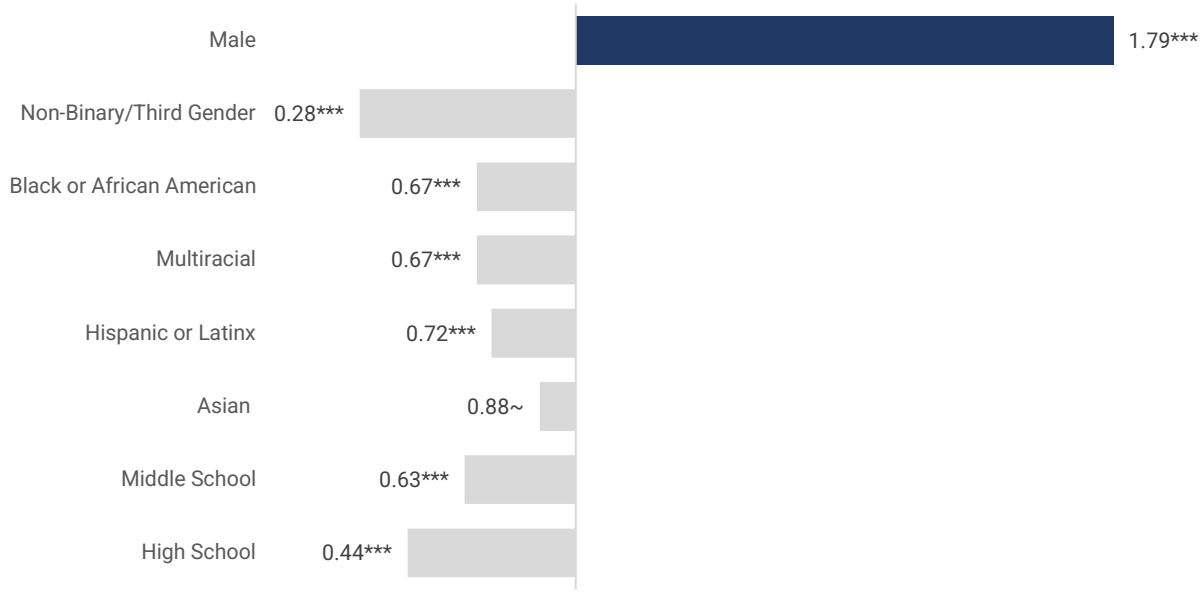
Note: The odds ratios are estimates using logistic regression models. The odds ratios reported are from a baseline model that controlled for available student characteristics. The reference groups we compare results against include female, White, and upper elementary students. [* p <.05, ** p<.01, ***p<.001]
Source: MI Student Voice perception survey; author's analysis.

Figure C2: The likelihood student subgroups report positive learning environments.



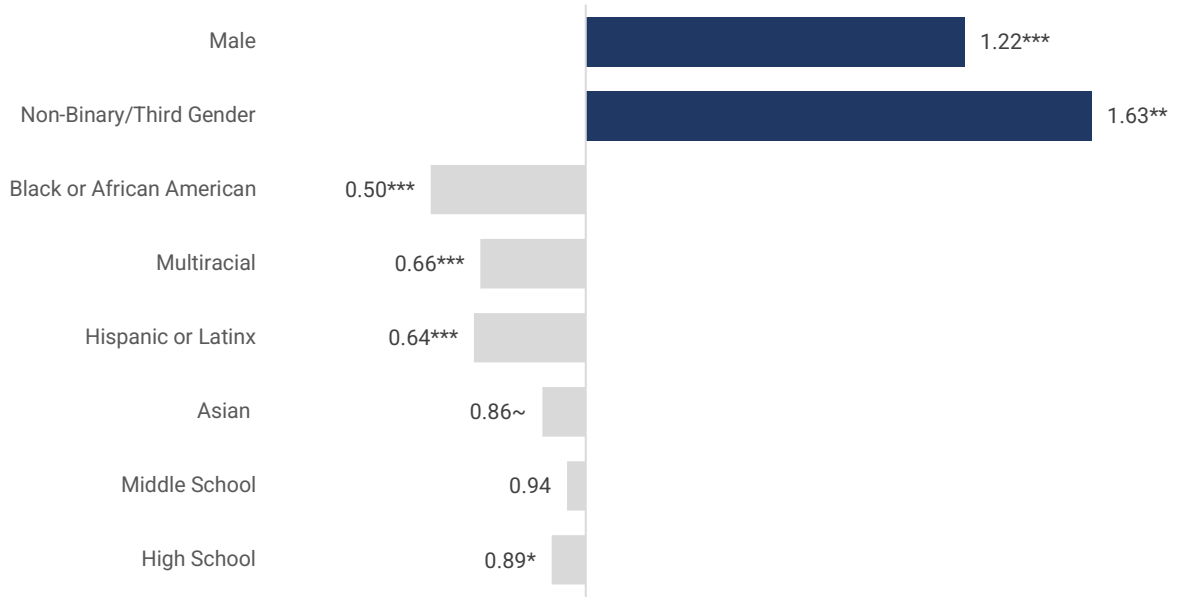
Note: The odds ratios are estimates using logistic regression models. The odds ratios reported are from a baseline model that controlled for available student characteristics. The reference groups we compare results against include Female, White, and Upper elementary students. [* p <.05, ** p<.01, ***p<.001]
Source: MI Student Voice perception survey; author's analysis.

Figure C3: The likelihood student subgroups report feeling more connected to peers.



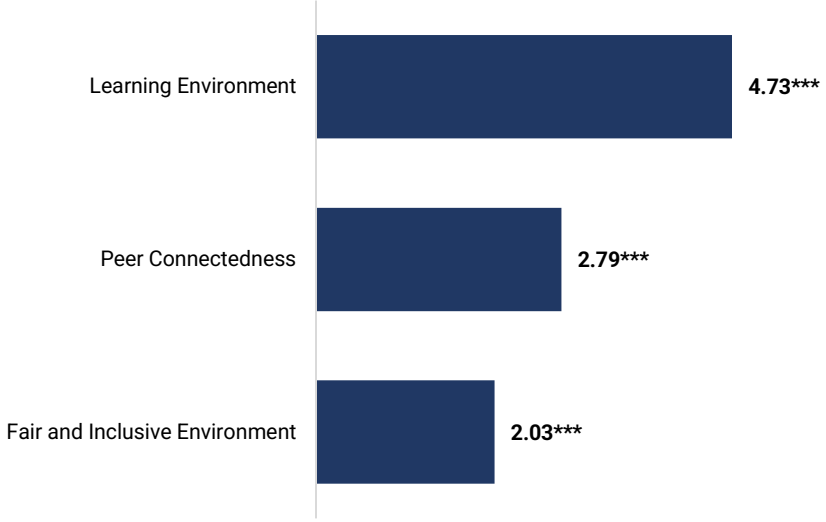
Note: The odds ratios are estimates using logistic regression models. The odds ratios reported are from a baseline model that controlled for available student characteristics. The reference groups we compare results against include Female, White, and Upper elementary students. [* p <.05, ** p<.01, ***p<.001]
Source: MI Student Voice perception survey; author's analysis.

Figure C4: The likelihood student subgroups report a fairer and more inclusive environment.



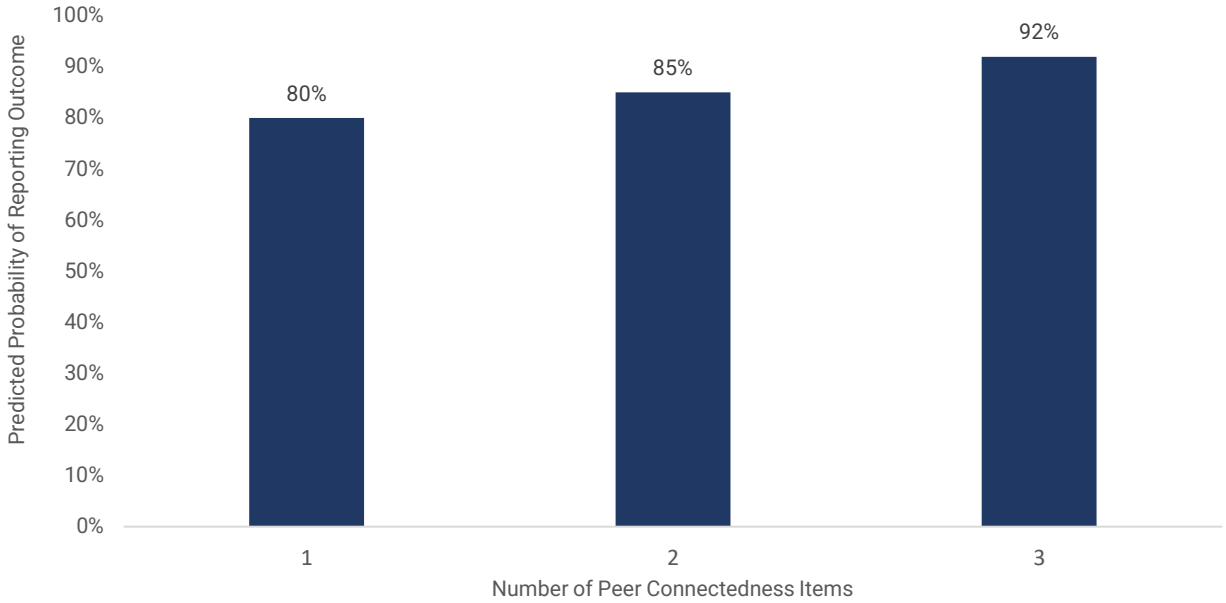
Note: The odds ratios are estimates using logistic regression models. The odds ratios reported are from a baseline model that controlled for available student characteristics. The reference groups we compare results against include Female, White, and Upper elementary students. [* p <.05, ** p<.01, ***p<.001]
Source: MI Student Voice perception survey; author's analysis.

Figure C5: The likelihood of reporting strong academic engagement as a function of reporting positive learning environments, feeling more connected to peers, and a fairer and more inclusive environment.



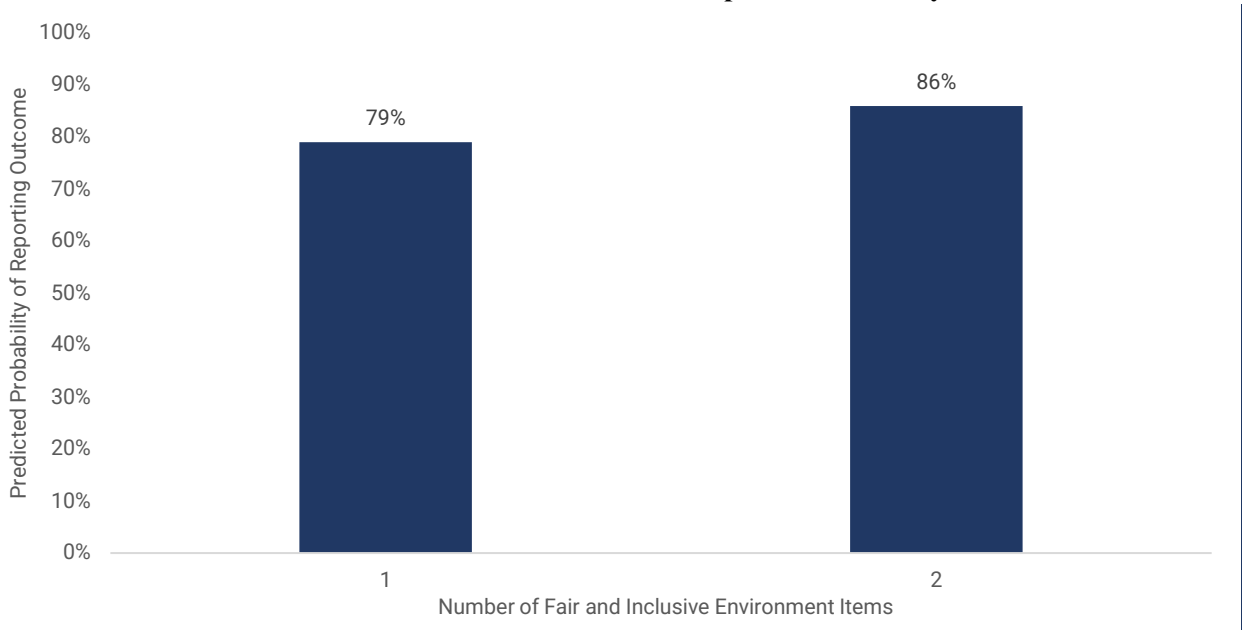
Note: The odds ratios are estimates using logistic regression models. Separate models were run for each outcome included in Figure C10. The odds ratios reported are from a baseline model that controlled for available student characteristics.
[* p <.05, ** p<.01, ***p<.001]
Source: MI Student Voice perception survey; author's analysis.

Figure C6: The predicted probability of reporting strong academic engagement by the number of peer connectedness items to which students responded favorably to.



Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.

Figure C7: The predicted probability of reporting strong academic engagement by the number of fair and inclusive environment items to which students responded favorably to.



Note: The probabilities shown in this figure are estimated using a multivariate logistic regression model that includes gender, race/ethnicity, and grade-level covariates.
Source: MI Student Voice perception survey; author's analysis.