

Measuring Student Engagement and Motivation

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How Do You Define Student Success?

Why do some student who perform well on tests end up being “under-performers”?

Why do some students who perform poorly on tests end up successful in life?

Notable Quotes

Not everything that counts can be counted, and not everything that can be counted counts.

Albert Einstein

To go fast, go alone. To go far, go together.

African proverb

Notable Quotes

“Postsecondary admissions (now) depend not just on the rote-learning-centered entrance exams, but also consider factors such as individual students' talents, creativity, and growth potential.... Between the pain of memorizing and the pleasure of creative expression, there needs to be a balance, both to develop the full potential of our students and to meet the nation's need for a skilled workforce and a well-educated citizenry.”

Byong-man Ahn, former Minister of Education, Republic of Korea

Education Week, “Education in the Republic of Korea: National Treasure or National Headache?,” January 12, 2012.

Goal of Basic Education “... to provide students with the opportunity to become responsible and respectful global citizens, to contribute to their economic well-being and that of their families and communities, to explore and understand different perspectives, and to enjoy productive and satisfying lives.” *RCW 28A.150.210*

Many Variables Important to Student Success Are Not Easily Measured

- Student motivation
- Student engagement
- Creativity
- Flexible thinking
- Collaboration skills
- Emotional intelligence
- Perseverance
- Curiosity

Defining What Matters

YOUTH DEVELOPMENT FOR EDUCATION RESULTS WORKGROUP

Youth Development for Education Results Workgroup of the Road Map Project

- Staffed by Youth Development Executives of King County
- 20 person team met twice monthly for 9 months

Key Road Map Indicators

- % of students motivated & engaged to succeed in school
- % of students with 21st century skills



Deciding What to Measure

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Criteria for Vetting Indicators

- **Communication Power:** Do the general public, educators and youth development professionals agree that the skill or disposition is important to youth success?
- **Proxy Power:** Does research validate that the skill or disposition has a strong linkage to success in school (K-12 and/or Higher Ed) and/or in the workforce?
- **Data Power:** Can growth in the skill or disposition be measured? Do tools exist to measure it?
- **Practice Power:** Are there strategies, practices or interventions that can be widely implemented to increase attainment of the skill or belief?



Key Researchers and Reports

- **Are They Really Ready To Work?** (The Conference Board, Partnership for 21st Century Skills, Corporate Voices for Working Families, and The Society for Human Resource professionals, 2006)
- **Redefining College Readiness** (David T. Conley, EPIC, 2007)
- **Habits of Mind**, Kosta and Kallick
- **Partnership for 21st Century Skills**
- **Angela Duckworth: Grit**
- **Carol Dweck: Growth Mindset**
- **Albert Bandura: Self-Efficacy**
- **C.R. Snyder: Hope**
- **CASEL: The Collaborative for Academic, Social, and Emotional Learning**
- **Teaching Adolescents to be Learners** (CCSR, 2012)
- **How Children Succeed: Grit, Curiosity, and the Hidden Power of Character** (Paul Tough, 2012)



“Educational interventions and initiatives that target these psychological factors can have transformative effects on students’ experience and achievement in school, improving core academic outcomes such as GPA and test scores months and even years later.”

Academic tenacity: Mindsets and skills that promote long-term learning
(Dweck, Walton, & Cohen, 2011)



Teaching adolescents to become learners

The role of noncognitive factors in shaping school performance

Camille A. Farrington, Melissa Roderick, Elaine Allensworth, Jenny Nagaoka,
Tasha Seneca Keyes, David W. Johnson, Nicole O. Williams

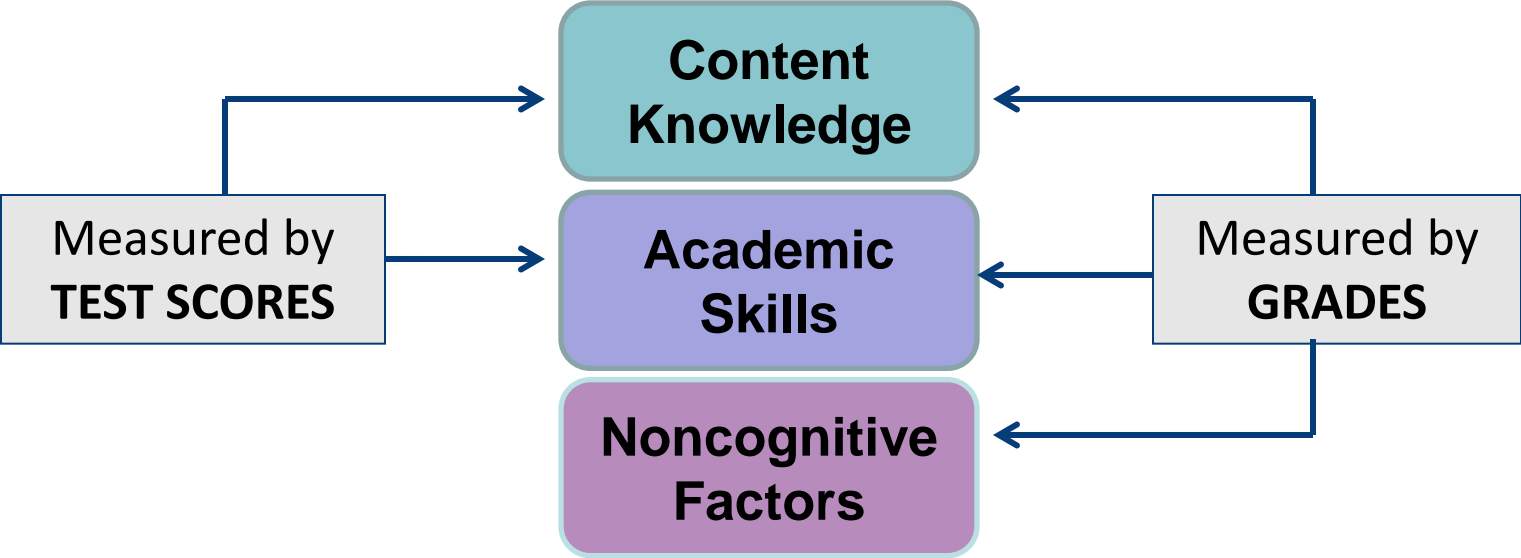
<http://files.eric.ed.gov/fulltext/ED542543.pdf>

One of the best student-level indicators of readiness is students' **grades**.

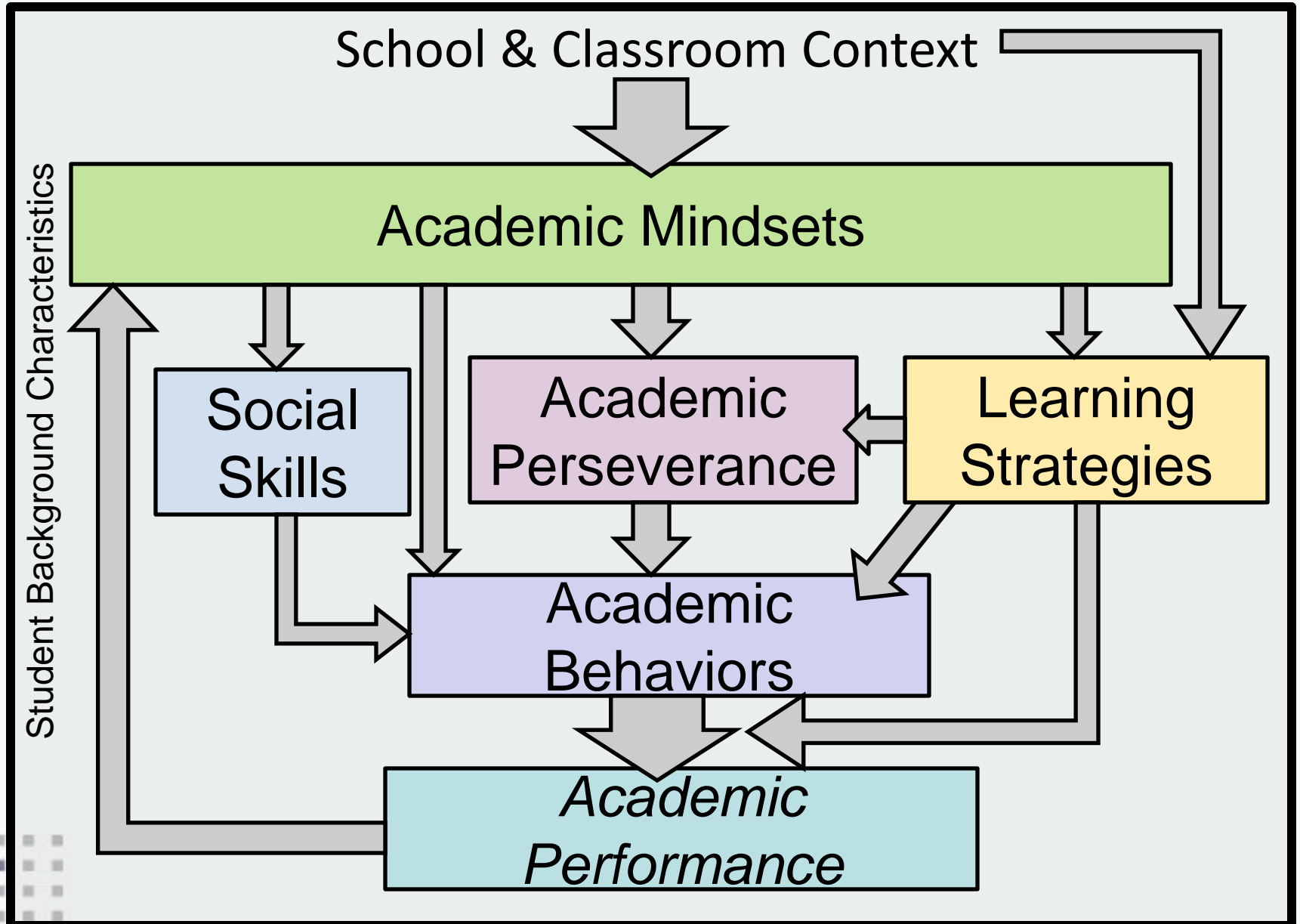
Grades matter – *more than test scores*
– for long-term educational outcomes:
high school graduation, college
enrollment, college completion.

**What factors
contribute to grades?**

Box 1.1 Measuring School Performance



Socio-Cultural Context



Details of Five Types of Noncognitive Factors

Academic Behaviors

Going to class, doing homework, organizing materials, participating, studying

Academic Perseverance

Grit, tenacity, delayed gratification, self-discipline, self-control

Academic Mindsets

I belong to this academic community, this work is valuable to me,
I can succeed at this, my ability and competence grow with my effort

Learning Strategies

Study skills, self-regulated learning, goal setting, metacognitive strategies

Social Skills

Interpersonal skills, empathy, cooperation, assertion, responsibility

“Habits of Mind” Are Present in the Common Core Standards

Capacities of a Literate Individual

- Demonstrate independence
- Build strong content knowledge
- Respond to the varying demands of audience, task, purpose, and discipline
- Comprehend as well as critique
- Value evidence
- Use technology and digital media strategically and capably
- Come to understand other perspectives and cultures

“Habits of Mind” Are Present in the Common Core Standards

Standards for Mathematical Practice

- Make sense of problems, persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning



**YOUTH DEVELOPMENT EXECUTIVES
OF KING COUNTY**



OUTCOME DOMAINS		SKILLS & DISPOSITIONS
Motivation & Engagement	FUTURE ORIENTATION	<ul style="list-style-type: none"> • Goal management: Setting short- and long-term goals and monitoring progress toward their achievement • Hope and optimism: Positive beliefs regarding one's future potential, goals and choices
	SELF MANAGEMENT	<ul style="list-style-type: none"> • Emotional regulation: Assessing and regulating one's feelings and emotions • Self-discipline: Ability to focus on a task in spite of distractions
	PERSEVERANCE / GRIT	<ul style="list-style-type: none"> • Perseverance: Tendency to persist in spite of obstacles or setbacks • Goal orientation: Commitment to the achievement of goals over time
	SELF EFFICACY & MINDSETS	<ul style="list-style-type: none"> • Self-Efficacy: Belief in one's own capabilities and capacity to learn and succeed • Growth mindset: Belief that intelligence and ability can increase through effort • Mastery orientation: Enjoyment of learning and desire to master new skills; willingness to try new things • Relevance: Belief that work done in school is related to personal aspirations
	BELONGING & IDENTITY	<ul style="list-style-type: none"> • Sense of belonging: Perception of acceptance and support in a learning community • Relationship building: Establishing and maintaining positive relationships with adults and peers in school setting • Personal identity: Understanding and valuing one's own culture and beliefs • Social capital: Recognizing and using family, school, and community resources; asking for help when needed
21st Century Skills	INTERPERSONAL SKILLS	<ul style="list-style-type: none"> • Collaboration: Negotiating and compromising when working in groups or pairs • Communication: Communicating effectively for a variety of purposes and audiences • Cultural competence: Ability to work effectively with people from different backgrounds; appreciation of diversity • Conflict resolution: Preventing, managing, and resolving interpersonal conflict • Compassion: Taking the perspective of and empathizing with others
	CREATIVITY	<ul style="list-style-type: none"> • Ideation: Using a wide range of idea creation techniques • Imagination: Using intellectual inventiveness to generate, discover, and restructure ideas or imagine alternatives • Innovation implementation: Acting on creative ideas to make a new contribution
	CRITICAL THINKING	<ul style="list-style-type: none"> • Metacognition: Ability to reflect on one's assumptions and thinking for the purposes of deeper understanding and self-evaluation. • Problem solving: Generating and selecting from alternatives based on desired outcomes • Analytical thinking: Separating problems or issues into their component parts

Deciding How to Measure

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Need multiple forms of measurement:

- Youth Self-Assessment
 - School-based Surveys (in conjunction with climate surveys)
 - Online Surveys by CBOs
- Teacher or Youth Worker Assessments
- Parent Surveys
- Demonstration of Skills / Performance based assessment (21st century skills, etc.)

Measurement tool depends on WHAT is being assessed and developmental appropriateness of the tool



Deciding on a Tool

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Sample of tools we reviewed

- All Road Map District Climate Surveys
- ACT's Engage Survey
- Gallup Student Poll & Gallup Enhanced Student Poll
- CEE Suite of Tools
- Healthy Youth Survey
- SAYO Survey of Afterschool Youth Outcomes
- DAP Developmental Asset Profile
- DESSA Devereaux Student Strengths Assessment
- Multiple compendiums of survey scales



Deciding on a Tool

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Criteria for Vetting Measurement Tools

- Cost
- Target age range
- Who completes (Self-report, Teacher-report, Parent-report, Org staff-report)
- Individually Identified or ability to disaggregate data
- Accessible Language
- Support / Training
- Validity, Reliability (for whom?)
- National Comparison
- Stand alone scales
- Ready to use
- Compatibility with Other Tools

AND DOES IS MEASURE WHAT WE WANT IT TO MEASURE?



Measurement Challenges

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Ongoing Measurement Questions / Challenges

- Sensitivity to change
- Social desirability bias
- Lack of wide differentiation between student response
- Skills and dispositions are not necessarily discreet from one another but develop in tandem
- Environment matters

‘We can’t let good be the enemy of great.’

- Jim Collins (paraphrased)



School-Based Survey Tool Objectives

- Developed a valid and reliable instrument to measure Student Engagement & Motivation (SEM) for School Success
- Data can be shared between schools and community-based organizations for shared SEM strategies
- Instrument is in the public domain and can be used by anyone with attribution to the partnership
- Data will be publically available at district / school level
- For research purposes: Individual-level data is available when appropriate confidentiality protections are in place

Process / Timeline

In 2012:

- Workgroup performed thorough research and instrument review
- Designed items and scales, expert review, refinement
- Pre-tested with middle-school students
- Refinement based on pre-tests, expert review led to pilot survey
- Translation (Spanish) and creation of pilot kits for Renton

In 2013:

- Analysis of pilot results (strong reliability and validity)
- Revised survey (learned from other research, removed/added items)
- Survey 2.0 version being given now

Renton Pilot

- Renton Pilot sample: N=5,983 students
 - Elementary students: N=701 (5th graders only)
 - Middle School students: N=1,887
 - High School students: N=3,090
- Response-rate: >90%
- CEE extended the pilot
 - Outside of the Road Map, CEE piloted survey in 39 schools in 5 districts spanning entire spectrum of performance and challenges (final N exceeded 12,000 responses)

Pilot: Scale Reliability

Scale	Items	All N=5964	Elem N=701	MS N=1887	HS N=3090
Academic Behaviors	4	0.776	0.763	0.765	0.766
Future Orientation	5	0.723	0.714	0.761	0.716
Interpersonal Skills	5	0.692	0.651	0.699	0.684
Sense of Belonging	3	0.518	0.428	0.533	0.514
Self-efficacy & Mindsets	9	0.741	0.689	0.730	0.763
Thinking and Learning Skills	9	0.841	0.832	0.851	0.832

Learning from the Pilot

- Reliability- reasonably strong
- Positive relationship between Student Engagement , Motivation, and Thinking and Learning skills and academic achievement
 - Relationships are both significant and reasonably strong.
- Refinement focus
 - Fine tuning items and scales
 - Reflect 2013 Chicago Consortium Pilot findings



District Perspective on Student Surveys

- Recognize importance of non-cognitive factors for being ready for college and the workplace
- Student views and engagement are part of the district's new strategic plan
- Administered pilot survey in December 2012
(23 schools with nearly 6,000 students in grades 5-12)
- Takes 10 minutes to complete
- CEE provided detailed reports for each school and the entire district

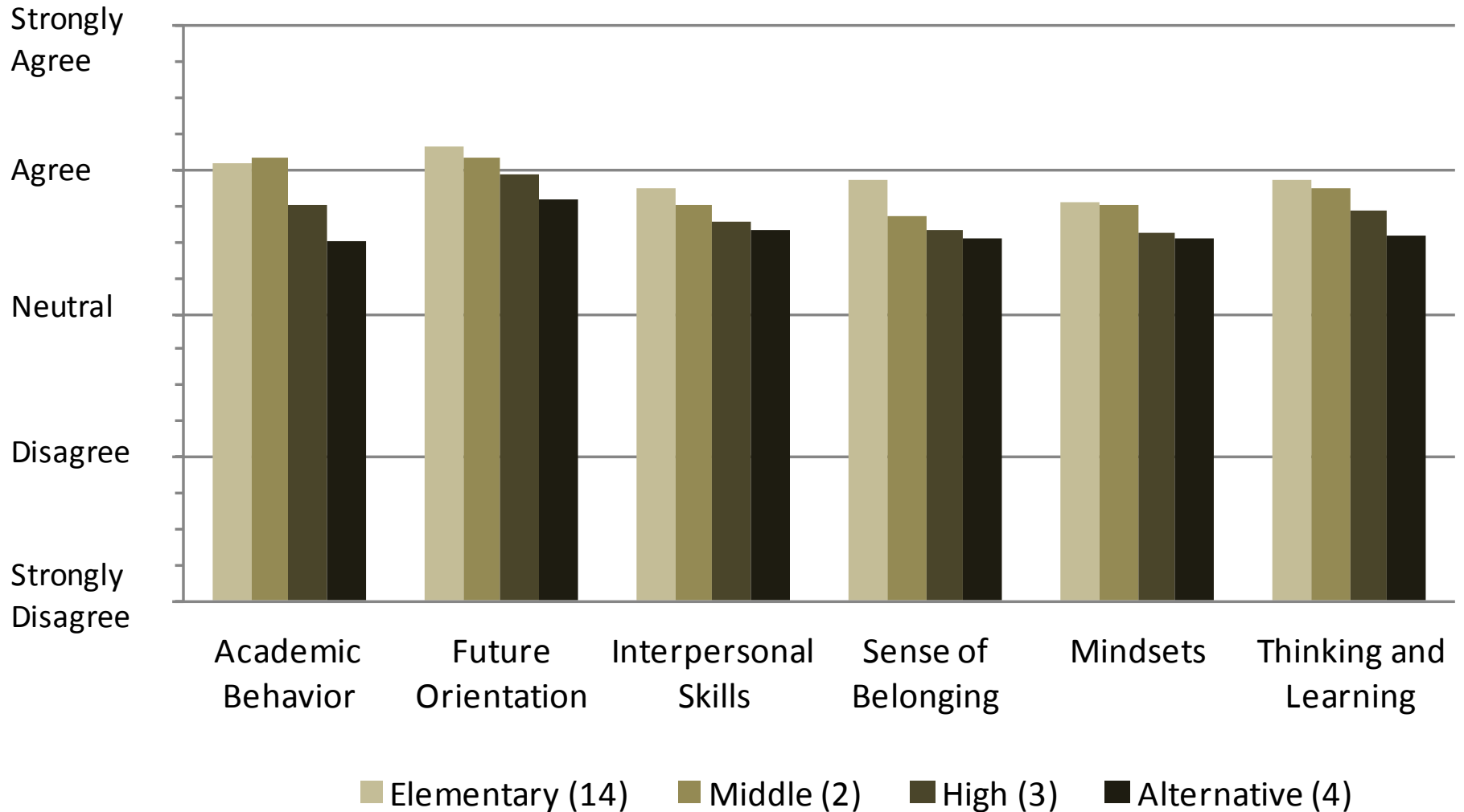


Overall Results from Pilot

- In almost all categories, elementary schools had the highest scores, high schools and alternative schools had the lowest scores
- Males scored higher than females in elementary but not in middle or high schools
- Asians scored higher than other students on Academic Behavior and Future Orientation
- Hispanics scored lower than others in all categories
- Higher scores for Academic Behavior and Future Orientation
Lower scores on Interpersonal Skills, Sense of Belonging, Mindsets
- Some schools had higher scores than others

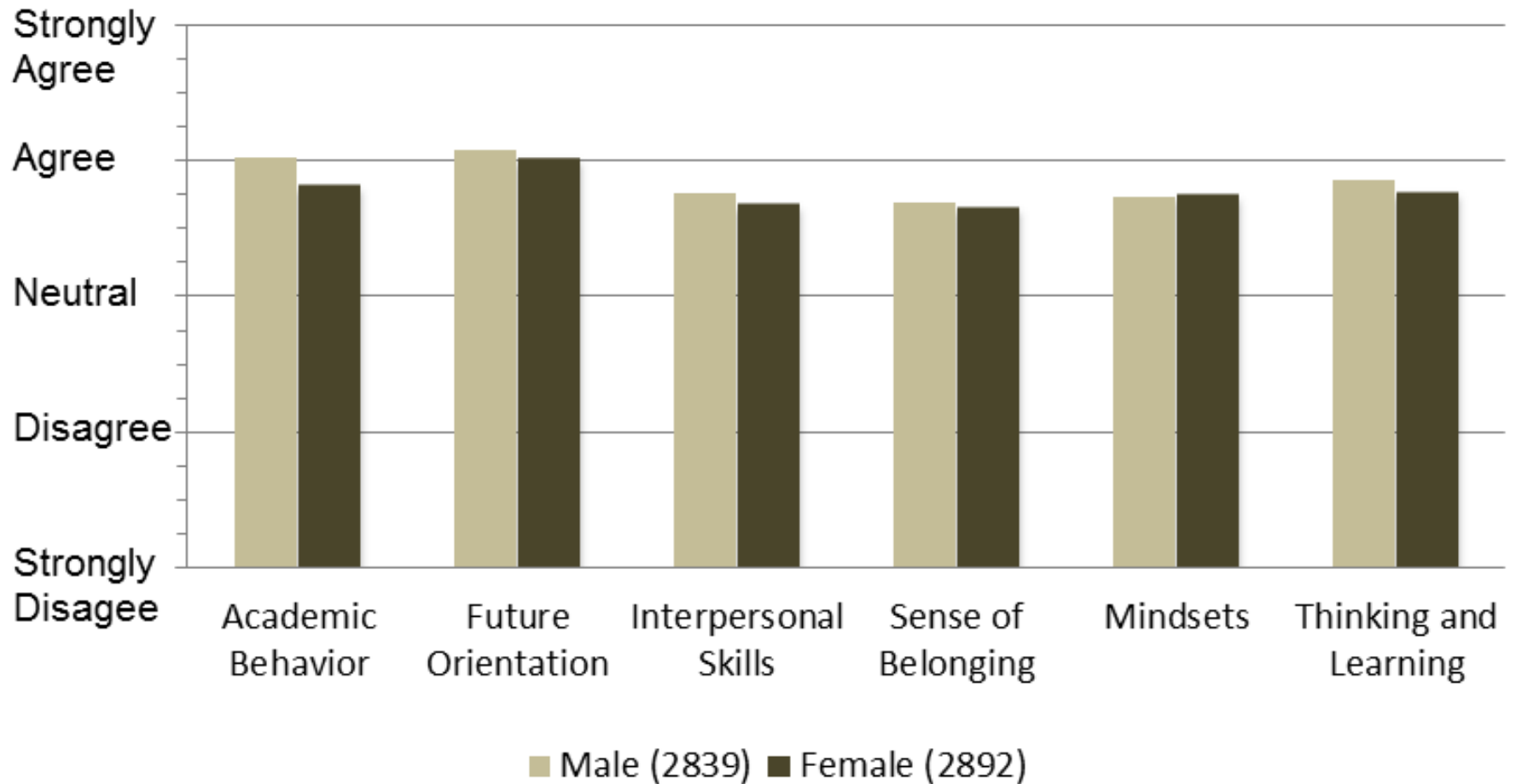


Average Scores Vary by Grade Band



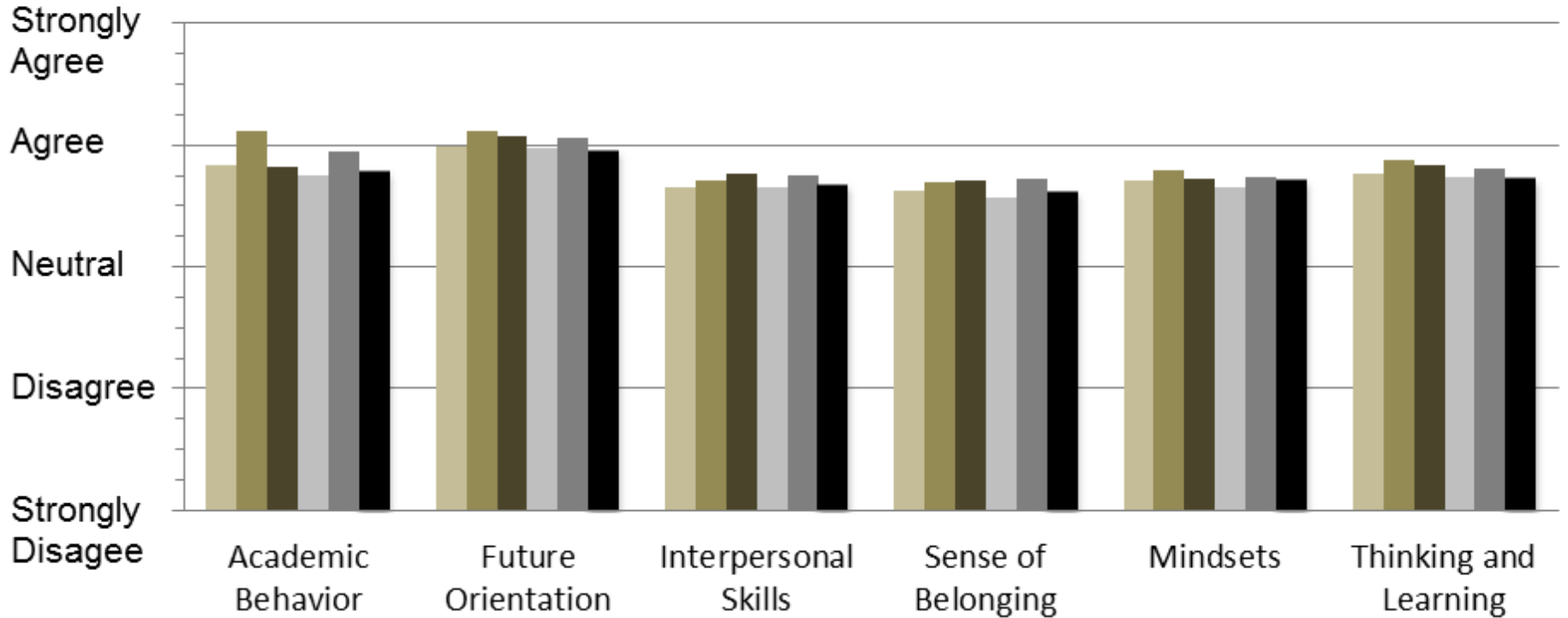


Renton School District





Renton School District



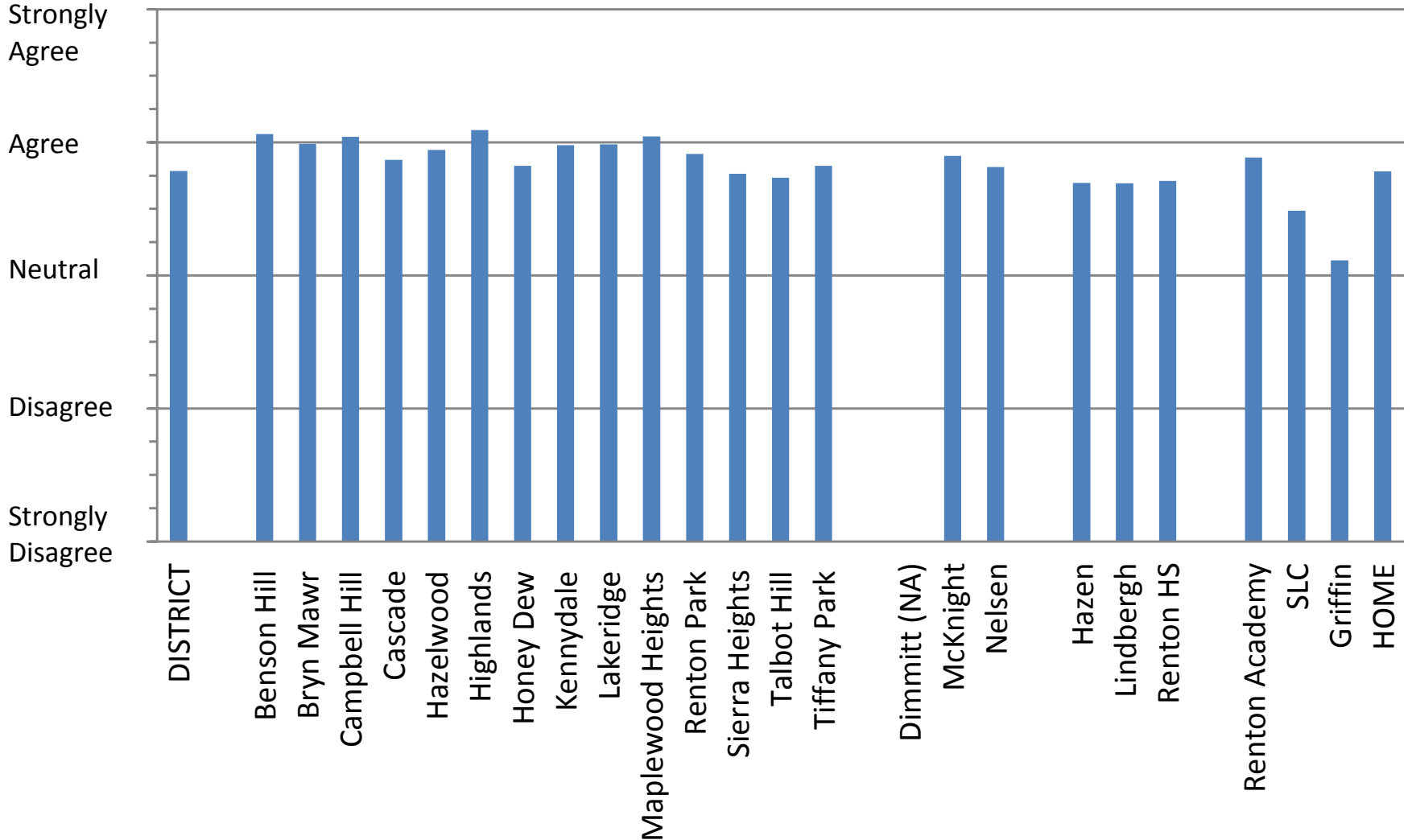
■ Amer. Indian/ Pac Is (268)
 ■ Asian* (1303)
 ■ African American (684)
 ■ Hispanic (830)
 ■ White (1502)
 ■ Multi-racial (959)

*May Include some Pacific Islanders



School Averages

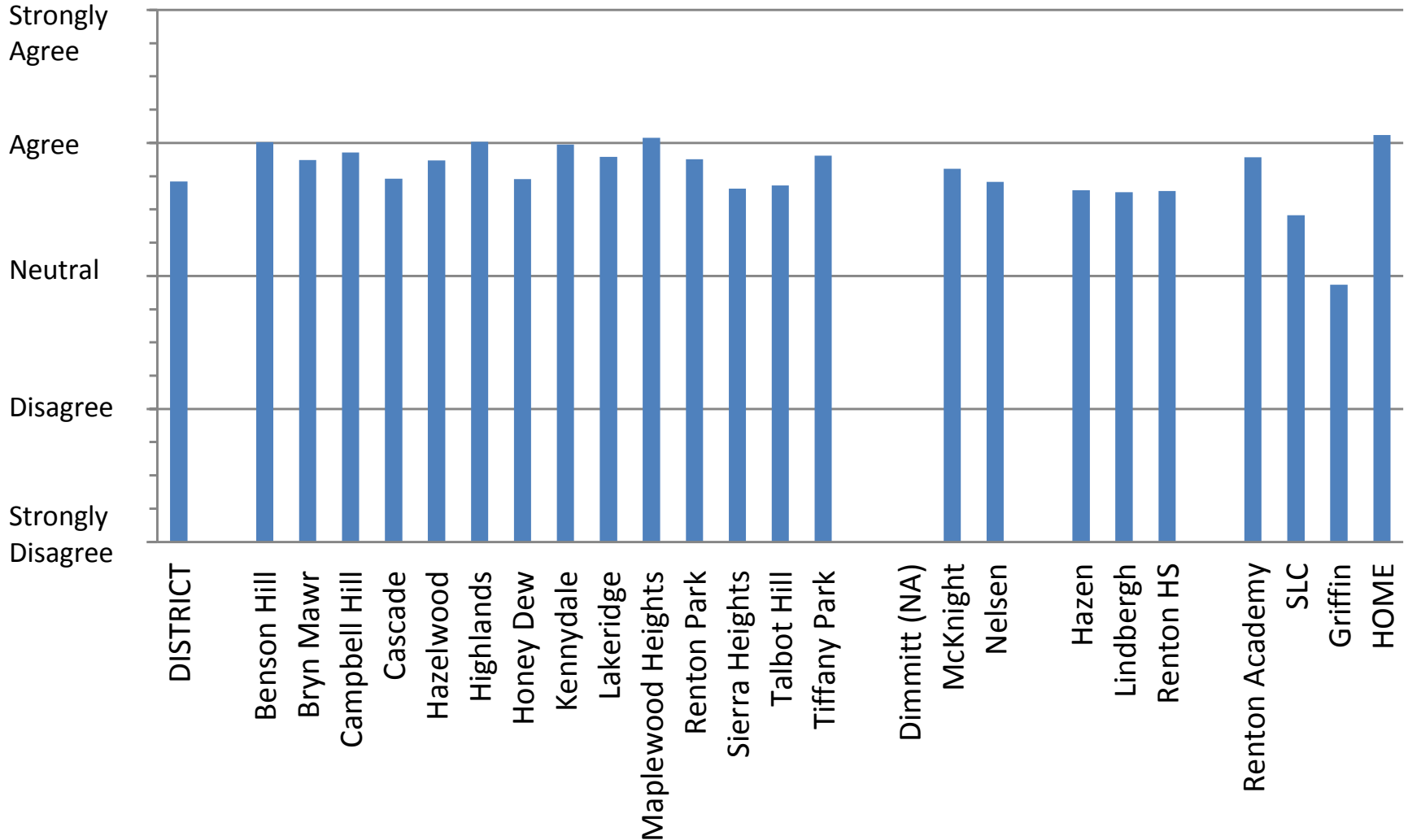
Overall Mean



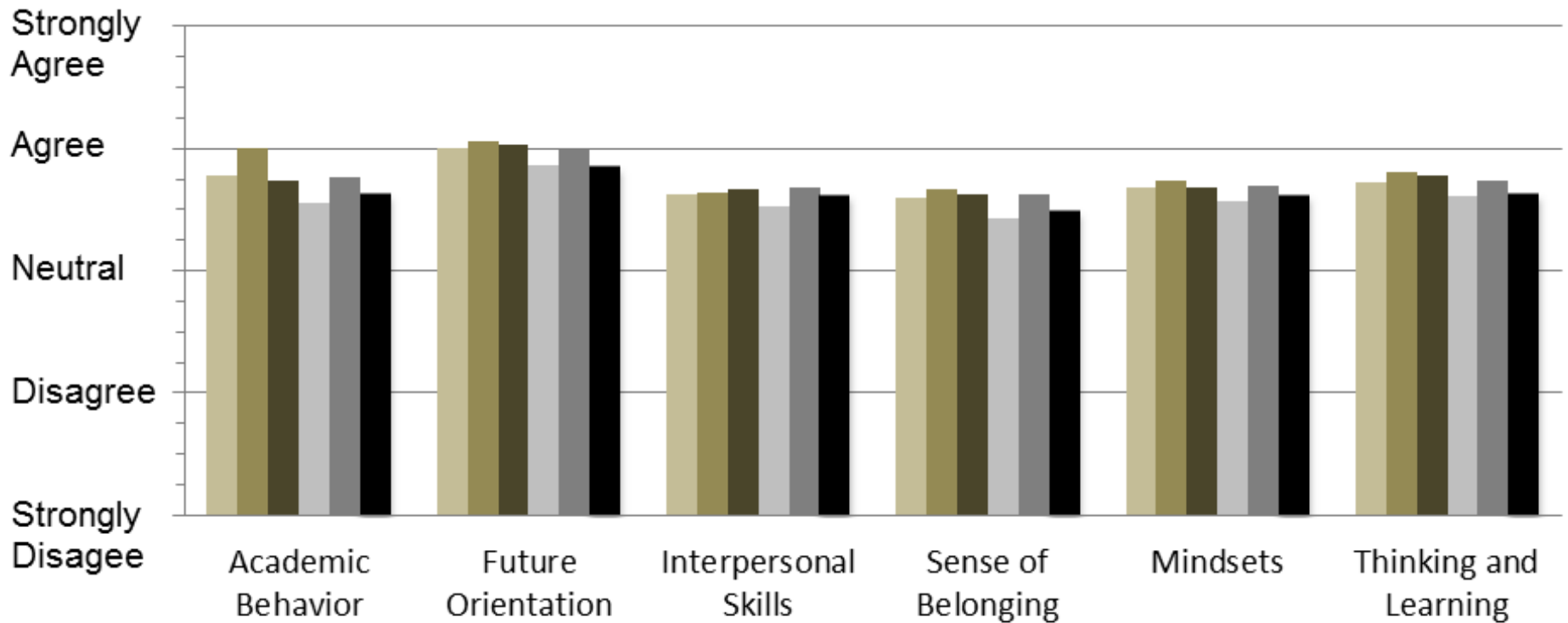


School Averages

Interpersonal Skills



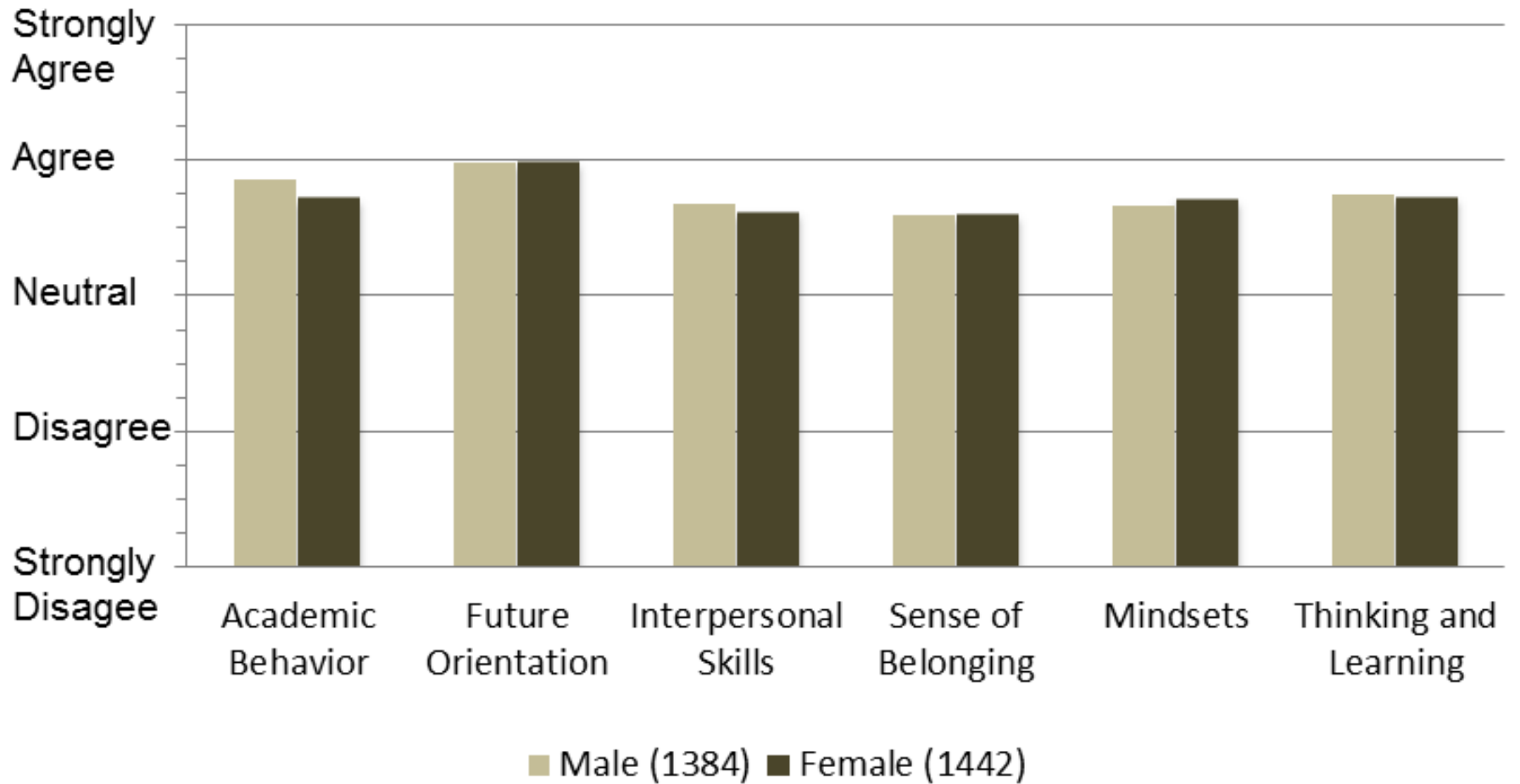
High Schools (3)



Amer. Indian/ Pac Is (148)
 Asian* (667)
 African American (386)
 Hispanic (398)
 White (735)
 Multi-racial (403)

*May Include some Pacific Islanders

High Schools (3)





Skills and Dispositions Have Positive Correlations with Academic Success

	<u>Grades last year (1-4 scale)*</u>	<u>Grades last year (A-F scale)*</u>
Academic Behavior	.344	.469
Future Orientation	.275	.353
Interpersonal Skills	.226	.239
Sense of Belonging	.168	.267
Mindsets	.251	.299
Thinking and Learning	.264	.318

* Grades are self-reported

All correlations are statistically significant at $p < .001$



What's Next

- School and district staff reflect on results
- Set targets for improvement using baseline data
- Develop strategies to strengthen non-cognitive factors within and outside of school
- Find ways to involve community partners (CBOs and business)
- Plan for administration this year

Remaining Comments and Questions