



Early Warning Indicators

Using Data to Identify Students At Risk of
Dropping Out

September 18, 2017



6 Charter
Partners



80
Schools



40,000
Students



13 Special
Facilities

WHO WE ARE



3,000
Teachers



7,000
Employees



1 Bold
Journey



ABOUT TULSA PUBLIC SCHOOLS



MISSION AND VISION

Tulsa Public Schools is the destination for extraordinary educators who work with our community and families to ignite the joy of learning and prepare every student for the greatest success in college, careers and life.

Our mission is to inspire and prepare every student to love learning, achieve ambitious goals and make positive contributions to our world.

LEARNER

We will learn, apply, reflect, adjust and persist together

CONTRIBUTOR

We will contribute to the well-being and success of our students and schools

DESIGNER

We will improve learning, solve problems and bring ideas to life through innovative and intentional design



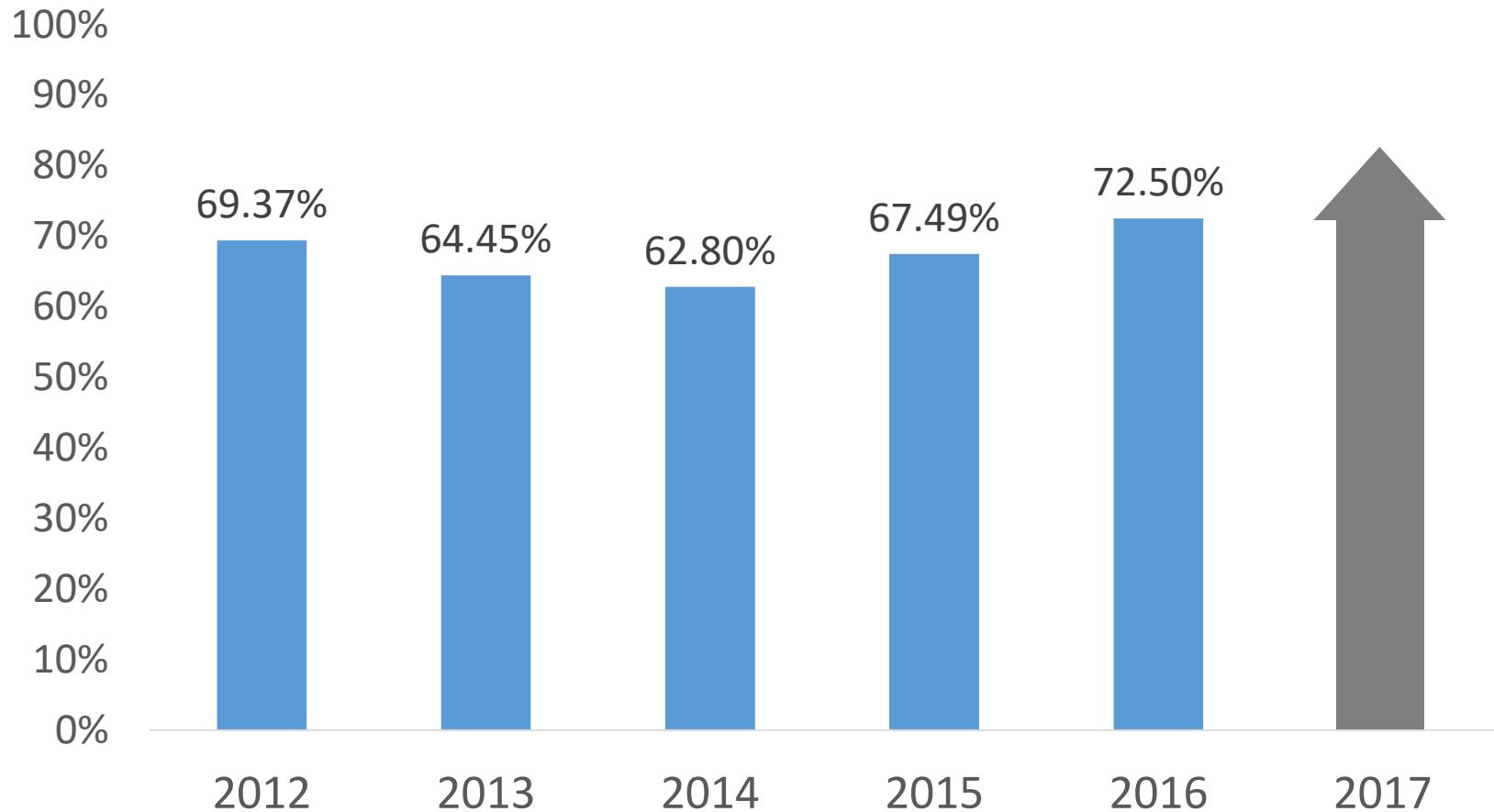


Drop-out rates vs. graduation rates



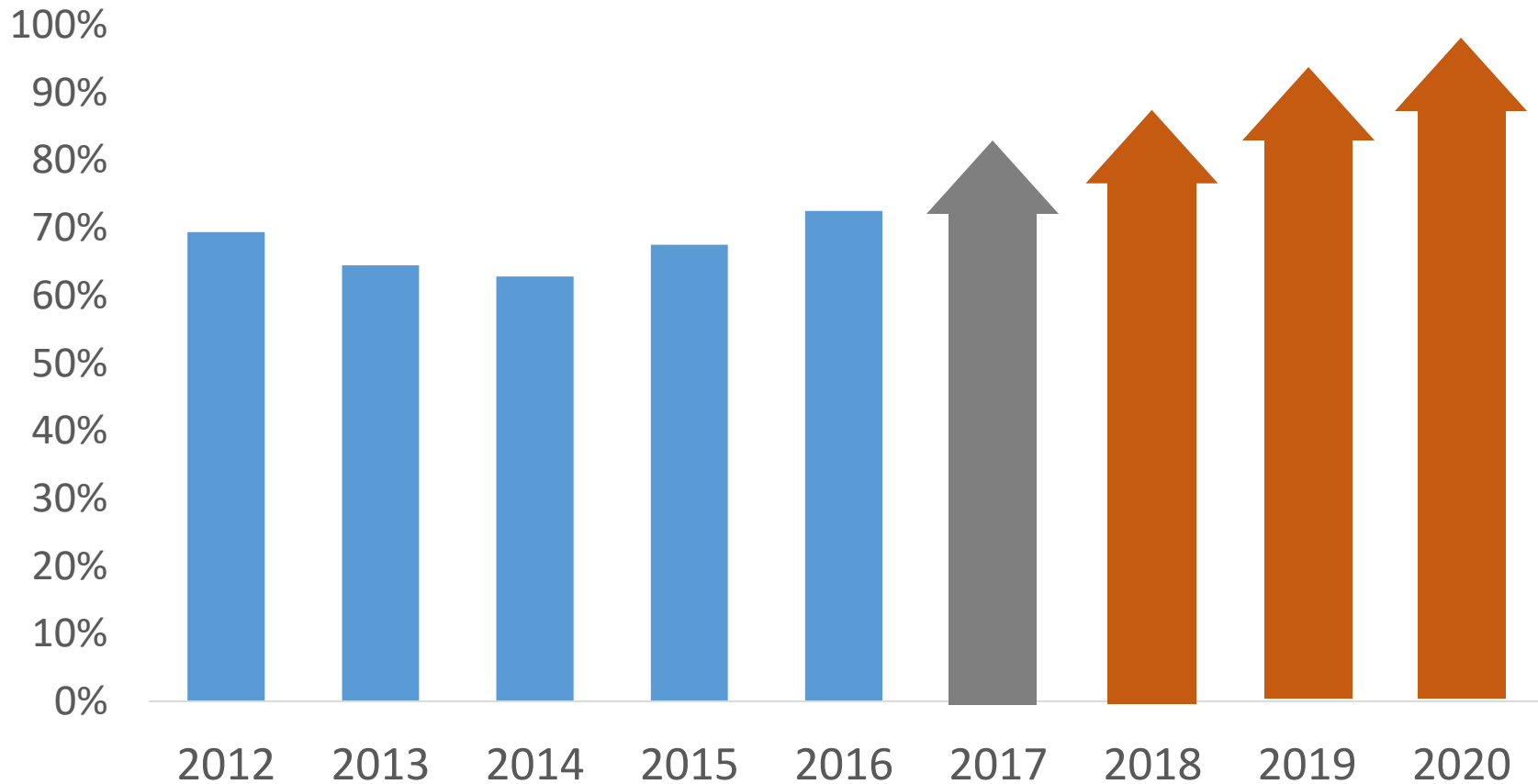


Graduation rates are improving





What will it take to continue seeing improved graduation rates?





What is the difference between graduation rates and dropout rates?

Graduation rates

- Percent of students completing all credit requirements within four years of starting high school
- Many students who finish their fourth year without enough credits continue on to earn their diploma but they are currently not included in the cohort graduation rate

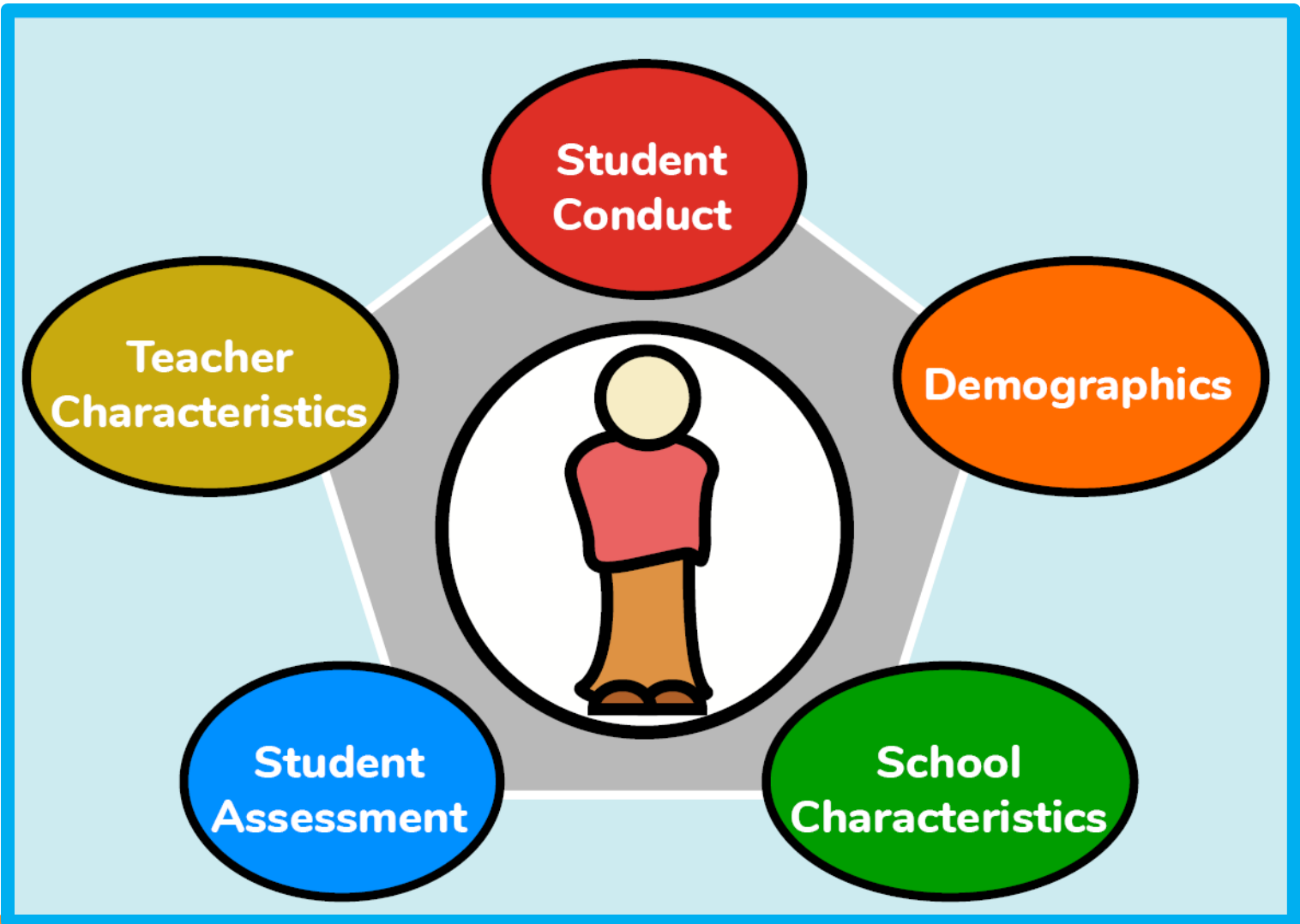
Drop-out rates

- Percent of students who leave Tulsa Public Schools before graduating and do not enroll in another degree issuing institution
- Students can be a drop-out at one point but still graduate on time
- Adds up over the course of years



What risk factors are most related to dropping out?

What factors are we able to explore?





What factors did we use?

Student Conduct

- Count of referrals
- Count of suspensions
- Frequency of referrals and suspensions
- Severity of infraction
- Total amount of referrals and suspensions
- Change in attendance
- Average student attendance
- Change in student absences
- Average student absences

Student Assessment

- Change in state math scores
- Average state math scores
- Change in state reading scores
- Average state reading scores
- Average of all state test scores
- SAT scores
- Average of course grades
- Change in course grades



What factors did we use?

Demographics

- Lunch status
- Student grade level
- Ethnicity
- English language learner
- Special education

Teacher Characteristics

- Change in comprehensive score for all of the student's teachers evaluations
- Average comprehensive score for all of the student's teachers
- Average Tripod score for all of the student's teachers
- Average Tulsa model score for all of the student's teachers
- Average value added score for all of the student's teachers.



What factors did we use?

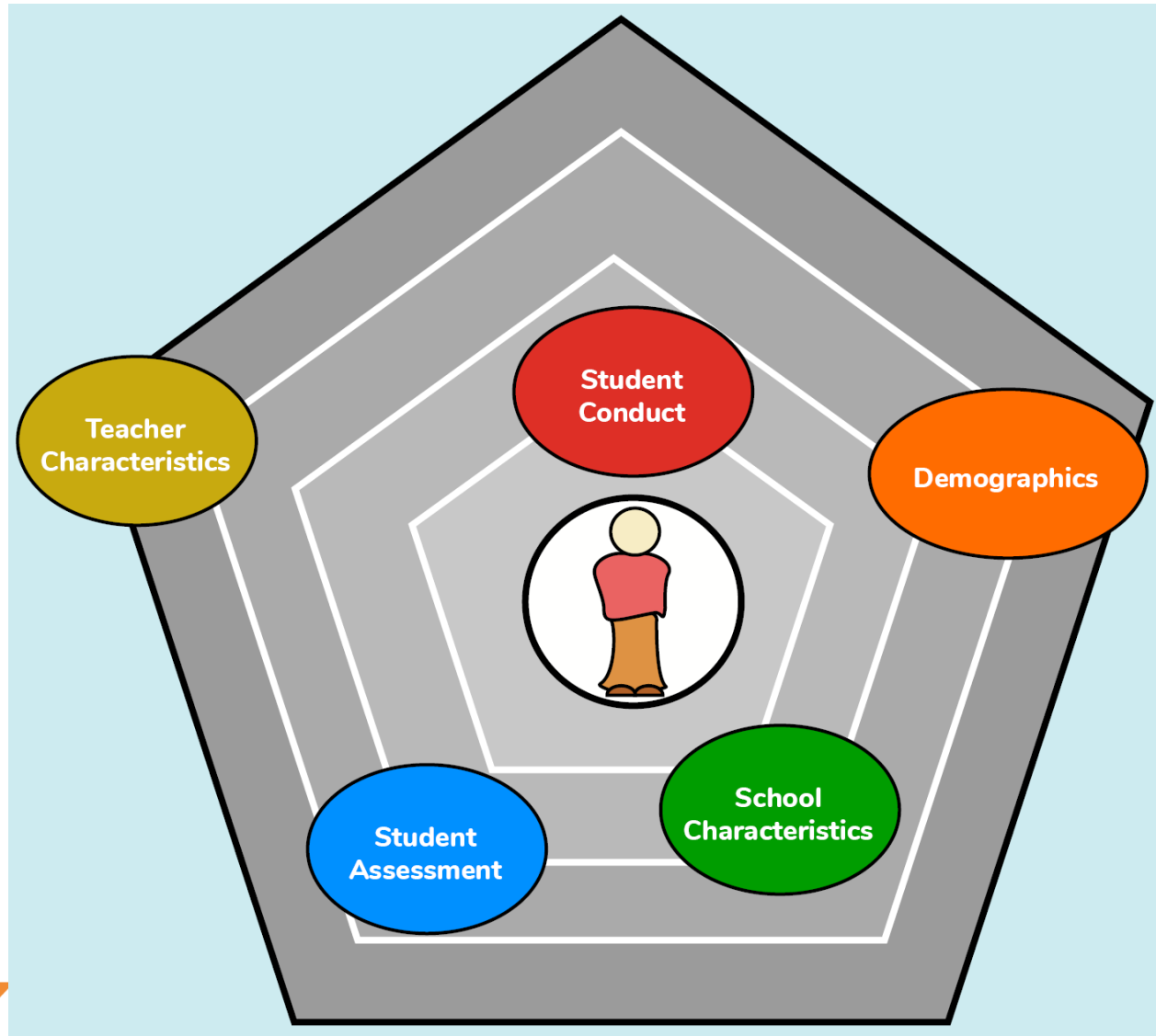
All assessment scores

School Characteristics

- Change in all scores for all schools attended by the student
- Average of all scores for all schools the student attended
- Average Tripod score for all schools the student attended
- Average Tulsa model scores for all schools attended by the student
- Average value added scores for all schools attended by the student



What did we find?



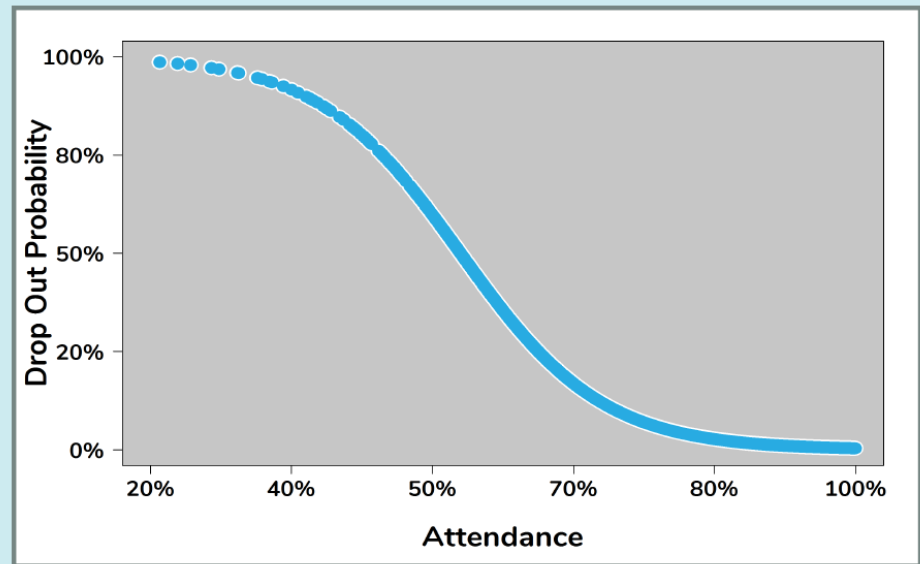
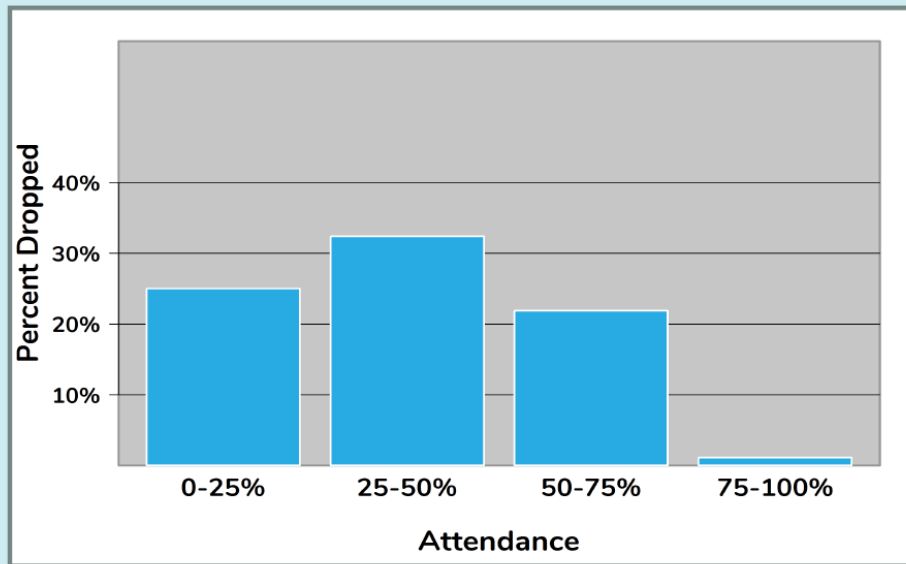


Top five factors

Rank	Factor	Cluster
1	Average class attendance	Student Conduct
2	Change in class attendance	Student Conduct
3	Student grade level	Demographic
4	Average student course grade	Student Assessment
5	Severity of conduct infraction	Student Conduct

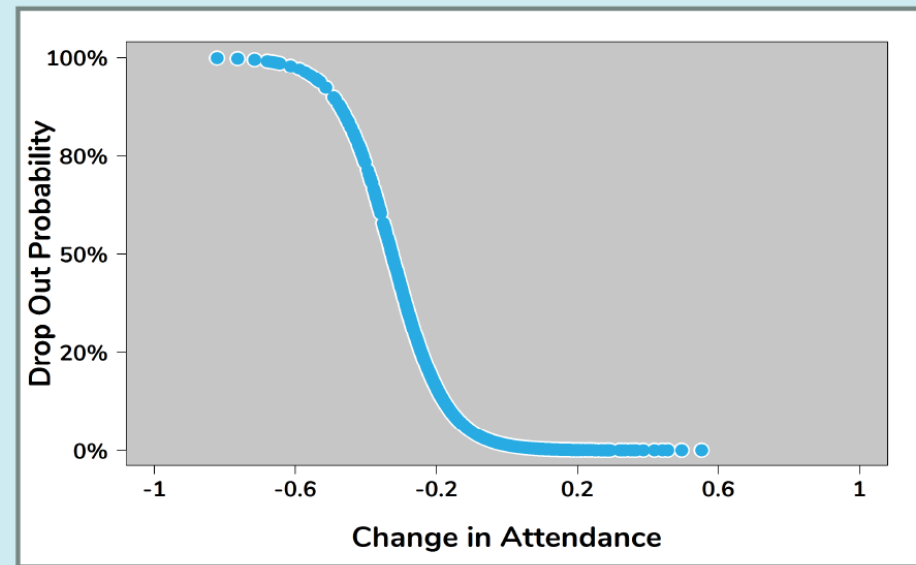
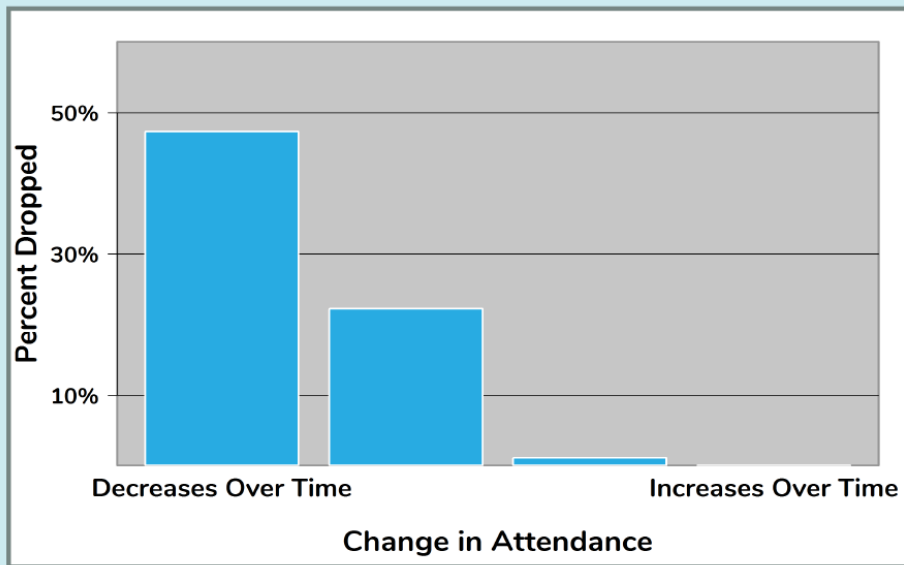


Average attendance



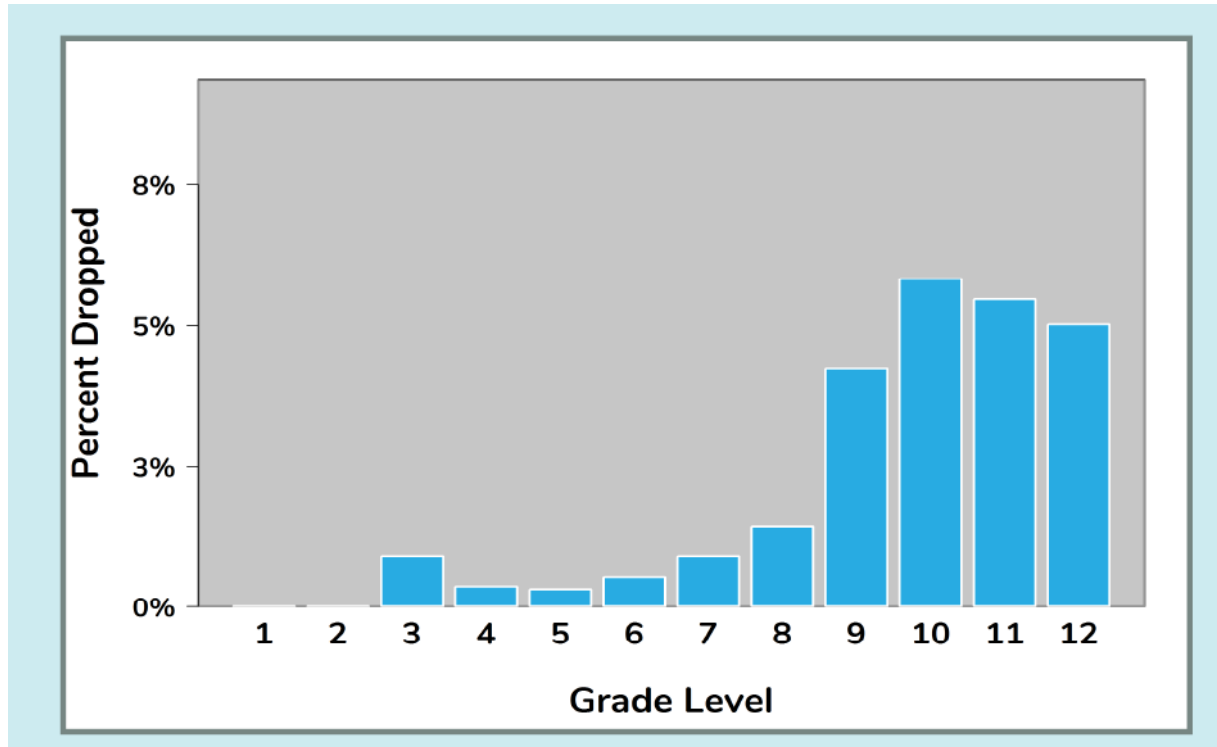


Change in attendance



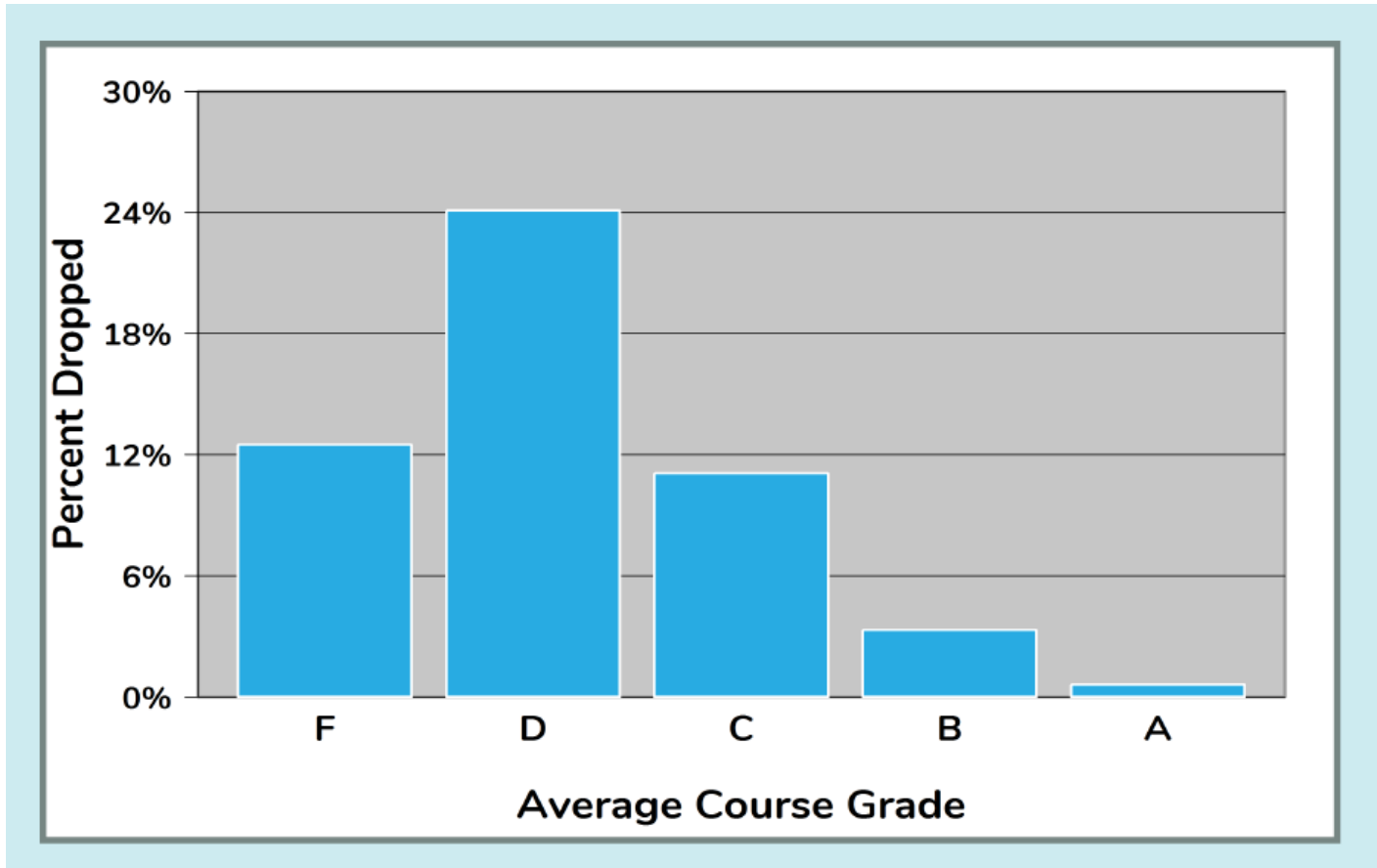


Grade level





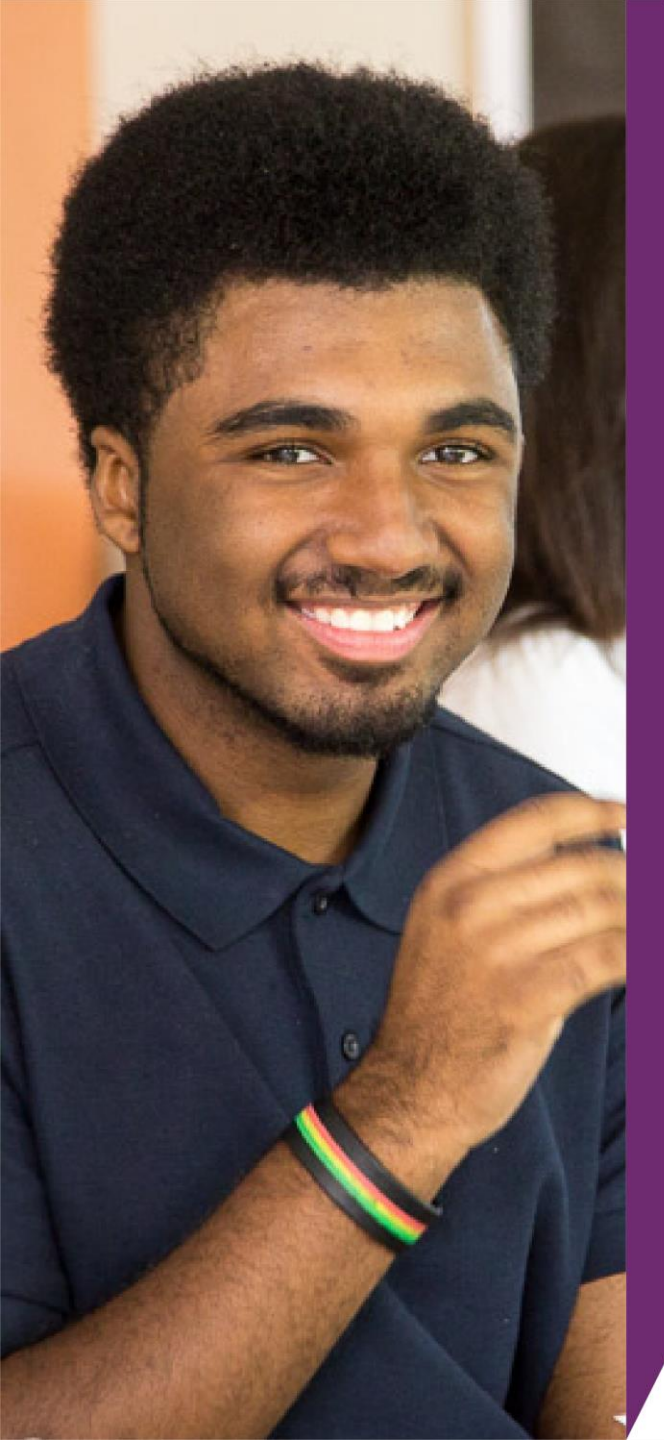
Average course grade





Summary of findings

- Attendance is the most important factor when trying to predict the likelihood of a student dropping out.
- The analysis will help to inform what programs/interventions the district should put in place to continue our upward trend in improving graduation rates.



How can this information help schools?





How can a statistical model help?

- Beyond just identifying the most impactful factors, we wanted to develop a model that could be used to identify students at risk of dropping out
- We aim to use our findings to inform the development of an early warning indicator system to be included in the data dashboards



What makes an early warning system valuable?

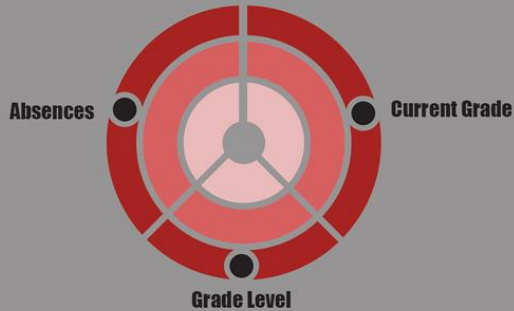
- Ability to intervene before it is too late
- Deploy limited resources in a strategic and targeted way
- Helps lead us to our goal of graduating all students college and career ready.



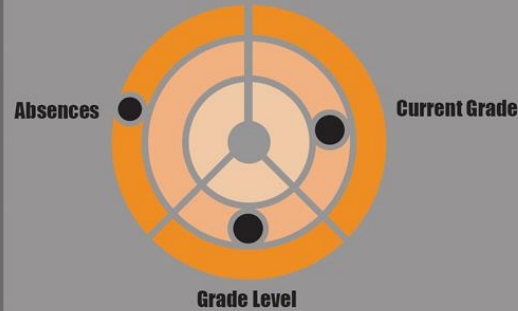
Summary of early warning indicators



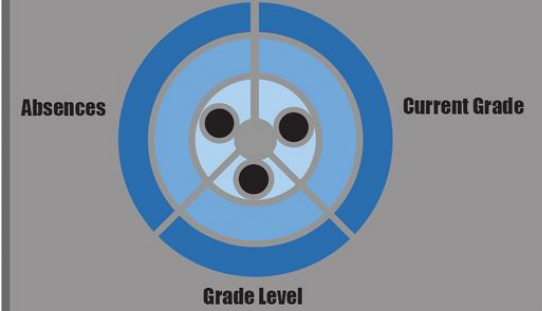
Risk for Dropping Out: High
Reason for Dropping Out: Absences, Ave. Class Grade, Grade Level
Suggested Interventions: Counselling on Absences, Fill out Academic Improvement Plan



Risk for Dropping Out: Moderate
Reason for Dropping Out: Absences
Suggested Interventions: Counselling on Absences,



Risk for Dropping Out: Low
Reason for Dropping Out:
Suggested Interventions:





Wrap Up



Actions moving forward

- These findings will be shared with school leaders and counselors in the coming week(s) to help inform their practice
- The data team will leverage this information in the development of new tools and resources for school leaders and teachers
- Additional white papers exploring critical data points will be developed



Questions

