



INAIR 2024: Eclipse Annual Conference  
**Eclipse and College Admission Tests**  
 Timothy Chow, PhD  
 Rose-Hulman Institute of Technology  
 March 21, 2024

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**Objectives**

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**Objectives**

- Share perceived cons of requiring standardized tests for admissions
- Share perceived pros of requiring standardized tests for admissions
- Identify opportunities to explore relationships between standardized test scores and student success indicators, such as student retention and graduation rates

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### Outline

- Eclipse and College Admission Tests
- Issues Associated with Standardized Tests for Admissions
- Why Consider Standardized Tests for Admissions
- Current Landscape
- What about RHIT
- Summary
- Q&As
- Addendum (on 4/26/2024)

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### Eclipse (Total Solar Eclipse)

- Is the moon blotting out the sun or the earth is moving into the shadow of the moon?
  - Sun will disappear briefly and turn day into night
- Depending on location (path of totality), the time for the total solar eclipse could range from 2 to 7 minutes
- Estimated 44 million people live inside the 115-mile-wide (185-kilometer-wide) path from Mexico to Canada
- About 32 million people in the US (covering about 15 states) live inside this path (one of the best spots in metro area: Indy)
- How many years would it take for the totality return to the same spot (according to NASA)?

Credit: "April's total solar eclipse is a month away" by Marcia Dunn, 3/8/24, Associated Press

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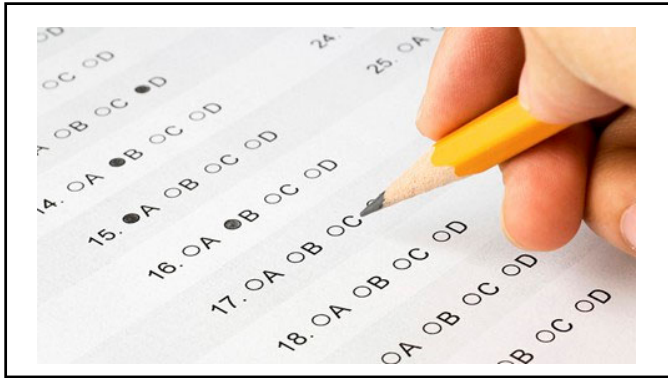
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### College Admission Tests (When did they begin?)

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The ACT (American College Testing) test, introduced in 1959, is the leading college and career readiness test in US, measuring what students have learned in school to gauge their readiness for success in first-year college coursework.

By ACT - <http://media.act.org/documents/preparing.pdf>. Public Domain. <https://commons.wikimedia.org/wiki/index.php?curid=6685437>

2



The first administration of the SAT occurred on June 23, 1926, when it was known as the Scholastic Aptitude Test... (ability to learn and apply knowledge and skills... more relevant to college success)

College Board. <https://satsuite.collegeboard.org/media/pdf/sample-sat-score-report.pdf>

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And the "survey" says...



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## Issues Associated with Standardized Tests for Admission



- College access barrier: unfair barrier due to added costs—preparation and participation in the tests
  - Reduce costs by removing barrier
- Barriers to diversity: hurt diversity due to score gaps by race and class (inequitable)
  - Improve campus diversity by using other admission criteria
- Predictive validity concerns: less relevant to skills and knowledge gained at HS
  - Use better predictor, HS GPA, for better prediction
- Added stress and anxiety: create stress to both students and their families
  - Reduce stress by having “one less things to do” with college applications
- Common practice among HEIs: 1,900+ Test-Optional and 80+ Test-Free (80%+)
  - Majority of the accredited institutions are offering either test-optional or test-free to prospective students enrolling in Fall 2024 or beyond (FairTest)

Credit: <https://inspiringinnovationsinc.files.wordpress.com/2021/06/survey-says-png?w=256&h=243>

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## Why Consider Standardized Tests for Admission



- Serve as college readiness indicator: correlated with first-year GPA, retention, and graduation
  - Help identify better matched students for the institutions
- Support diversity: offer additional data to identify students with diverse background
  - Improve opportunities for applicants from first-generation, economic diverse, and underserved populations
- Address predictive validity concerns with HS GPA: potential grade inflation
  - Help with interpretation of pre-college performance indicator
- Reduce stress and anxiety: add transparency to the admission process
  - Reduce stress by disclosing the admissions process (role of standardized tests)

Credit: <https://inspiringinnovationsinc.files.wordpress.com/2021/06/survey-says-png?w=256&h=243>

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## Current Landscape

- Pandemic is finally over (thank goodness!)
- Higher Education Institutions are reviewing their test-optional/test-blind policies
- More options to offer to prospective students, such as test-flexible (with Advance Placement or International Baccalaureate exams)
- In January 2023, the NCAA removed standardized test score requirements for initial eligibility for student-athletes
- Among others, the California State University, the University of California System, Washington State University have removed standardized test requirements for admission eligibility for all campuses.

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### Current Landscape

- Nationally, some Ivy Plus HEIs are removing the requirement for good:
  - Caltech, Columbia
- Nationally, some Ivy Plus HEIs are returning to test-required policies:
  - Brown, Dartmouth, Georgetown, MIT, Yale
- Regionally, some HEIs are removing the requirement for good:
  - Northern Illinois University, Worcester Polytechnic Institute
- Regionally, some HEIs are returning to test-required policies:
  - Georgia, Georgia Tech, Purdue, UTK (Knoxville, TN), UTexas-Austin
- Currently, with limited exception, all Indiana HEIs are offering test-optional to prospective students

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### Current Landscape

- When (test) required, standardized test scores are reported being used for:
  - Adding contextual understanding when comparing to regional norms, given the differences in accessibility and availability of advanced coursework and enrichment programs to prospective students with varying background
  - Serving as a part of the comprehensive/holistic review process, for referencing HS GPA and other pre-college performance indicators
  - Supporting the review process with large applicant pool and from a large number of high schools with varying grading systems
  - Supporting course or honors program placement, scholarship, student support decisions
  - Supporting decisions with selected applicant pools, such as international applicants, homeschooled students, or transfer students
  - Adding transparency by disclosing the roles of test scores for the admission process

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What about RHIT?




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### What about RHIT?

- Conducted an environmental scanning (credit: Dr. Susan Kahn) during 2022-2023 on:
  - National trends
  - Early estimates of impacts of test-optional policies:
    - Positive: increased racial diversity for URM groups, narrowed admissions gender gap, increase in enrollment, increase in overall average test scores and GPA for the incoming class
    - Neutral: no evidence that test-optional policies increase diversity by race, socioeconomic status, or gender
    - Negative: URM disadvantaged by reliance on subjective metrics more susceptible to bias
    - Unknown: Unknown effects of “the submitter advantage”

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### What about RHIT?

- Exploratory analysis on first fall term GPA and DFW rate for first fall term Calculus Course for the 2020, 2021, and 2022 cohorts:
  - About 80%+ with test scores (ACT and/or SAT) for 2021 and 2022 cohorts
  - GPA: Observed slight difference among groups
  - DFW Rate: Observed no difference for 2021 cohort and some difference for 2022 cohort
- Exploratory analysis on cohort retention and 4-year graduation rates:
  - Retention (Combined): for 2014, 2015, 2016, 2017 and 2018 cohorts
  - Graduation (Combined) for 2011, 2012, 2013, 2014, and 2015 cohorts

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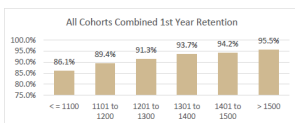
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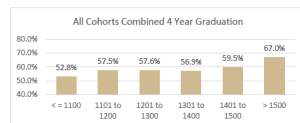
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### From “The Use of Test Scores in Undergraduate Admission” Report from Purdue University

**Retention Rates by SAT/Concorded ACT Score Bands**



**Graduation Rates by SAT/Concorded ACT Score Bands**




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 What about RHIT--  
any difference?
 

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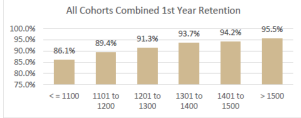
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Using local data for examining retention rates

**Purdue West Lafayette**

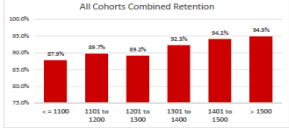
All Cohorts Combined 1st Year Retention



Cohort Size	Retention Rate
<= 1100	86.1%
1101 to 1200	85.4%
1201 to 1300	91.3%
1301 to 1400	93.7%
1401 to 1500	94.2%
> 1500	95.5%

**Rose-Hulman**

All Cohorts Combined Retention



Cohort Size	Retention Rate
<= 1100	87.2%
1101 to 1200	88.7%
1201 to 1300	89.0%
1301 to 1400	92.3%
1401 to 1500	94.2%
> 1500	94.3%

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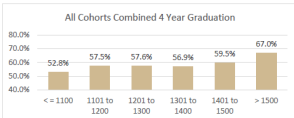
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Using local data for examining graduation rates

**Purdue West Lafayette**

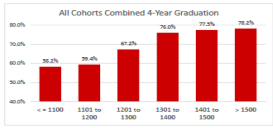
All Cohorts Combined 4 Year Graduation



Cohort Size	Graduation Rate
<= 1100	52.8%
1101 to 1200	57.5%
1201 to 1300	57.6%
1301 to 1400	56.9%
1401 to 1500	59.5%
> 1500	67.0%

**Rose-Hulman**

All Cohorts Combined 4-Year Graduation



Cohort Size	Graduation Rate
<= 1100	58.2%
1101 to 1200	58.4%
1201 to 1300	61.2%
1301 to 1400	70.8%
1401 to 1500	77.3%
> 1500	78.2%

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### Summary

- Based on our preliminary analysis and observations using our local data:
  - It looks like the published findings regarding the correlation between standardized test scores and some of the academic success indicators (GPA, DFW Rates, retention rates, and graduation rates) are relevant to our institution and our observations are consistent with the relationships described in some of the recently published reports
  - It seems to suggest if math and physics are part of the core requirements for first-year students, the inclusion of standardized test scores in the analysis is helpful to examine student college readiness, particularly when HS GPA may not contribute to a better understanding in this case
  - The added advantage of including (not solely relying on) standardized test scores is for supporting comprehensive/holistic review process when the volume of application is high (e.g., reviewing 33K versus 13K cases to form a class of 1K versus 300) and some pre-college performance indicators have restrictions (narrow in range, impacted by educational inequality, etc.)

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### Issues Associated with Standardized Tests for Admission (Remediation)



- College access barrier: unfair barrier due to added costs—preparation and participation in the tests
  - Finding ways to address cost barrier by sponsoring participating in the tests and leveraging free or lower cost resources for test preparation (e.g., Khan Academy)
- Barriers to diversity: hurt diversity due to score gaps by race and class (inequitable)
  - Recognizing the negative effects and the improper use of standardized test scores in decision making process
- Predictive validity concerns: less relevant to skills and knowledge gained at HS
  - Incorporating standardized test scores and "triangulating" with other college readiness indicators
- Added stress and anxiety: create stress to both students and their families
  - Explaining the roles of standardized test scores in admission decisions to applicants and families
- Common practice among HEIs: 1,900+ Test-Optional and 80+ Test-Free (80%+)
  - Reviewing and examining the roles of standardized test scores with local data given different missions and contexts for diverse HEIs

Credit: <https://inspiringinnovationsinc.files.wordpress.com/2021/06/survey-says-png?w=256&h=243>

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### Q&As

- Your experience
- Your thoughts

Thank you for attending this session and enjoy the rest of the conference!

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So Bard (Gemini), what might be in common about eclipse and college admission standardized test?

At first glance, an eclipse and a college admission standardized test might seem like they have nothing in common. However, upon closer examination, there are some surprising parallels between the two:

**1. Both are rare and unpredictable:**

- Eclipses: Solar eclipses, where the moon completely blocks the sun, are relatively rare events, occurring only a few times each century at any given location. Similarly, standardized tests like the SAT or ACT are high-stakes exams that can significantly impact a student's future, making them feel like a once-in-a-lifetime event.
- Standardized tests: While standardized tests are administered more frequently than eclipses, the specific outcome for each student can be unpredictable. Factors like test anxiety, preparation, and external circumstances can all influence the final score.

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So Bard (Gemini), what might be in common about eclipse and college admission standardized test?

**2. Both require precise timing and alignment:**

- Eclipses: The occurrence of an eclipse depends on the precise alignment of the sun, moon, and Earth. Even a slight deviation in their positions can alter the visibility or type of eclipse.
- Standardized tests: Taking a standardized test effectively requires students to be at their peak mental and physical state. Proper sleep, timing of breaks, and managing stress all contribute to optimal performance.

**3. Both are observed and analyzed:**

- Eclipses: Scientists and astronomers meticulously observe and record eclipses to gather data and learn more about the celestial bodies involved.
- Standardized tests: Educators and researchers analyze standardized test results to identify trends, assess learning gaps, and evaluate the effectiveness of the testing system.

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So Bard (Gemini), what might be in common about eclipse and college admission standardized test?

**4. Both can have a lasting impact:**

- Eclipses: Witnessing a total solar eclipse can be a awe-inspiring and unforgettable experience, leaving a lasting impression on observers.
- Standardized tests: The results of standardized tests can have a significant impact on a student's academic and professional trajectory, shaping their college choices, scholarship opportunities, and career paths.

**5. Both are subject to external influences:**

- Eclipses: Weather conditions like clouds can obscure the view of an eclipse, just as external factors like noise or distractions can affect a student's performance on a standardized test.
- Standardized tests: The socio-economic background, access to quality education, and test-taking strategies can all influence a student's score, highlighting the potential for systemic biases in standardized testing.

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So Bard (Gemini), what might be in common about eclipse and college admission standardized test?

In conclusion, while seemingly disparate phenomena, eclipses and standardized tests share several unexpected commonalities. Both are rare, unpredictable events that require precise timing and alignment. Both are observed and analyzed for their impact, and both can have a lasting influence on individuals. Recognizing these parallels can offer a unique perspective on both celestial occurrences and high-stakes assessments.

I hope this helps! Let me know if you have any other questions.



Image credit: <https://gemini.google.com/>

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 Addendum  
(4/26/2024)




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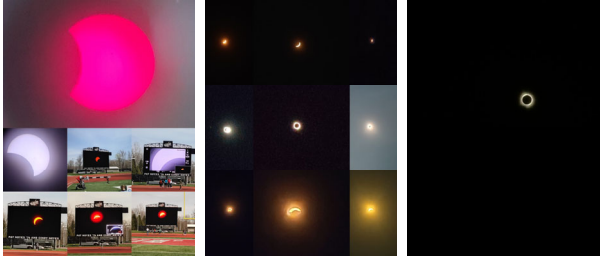
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2024 A Total Eclipse of the Haute 




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Current Landscape as of 4/26/2024

- Nationally, some Ivy Plus HEIs are removing the requirement for good:
  - ~Caltech, Columbia
- Nationally, some Ivy Plus HEIs are returning to test-required policies:
  - Brown, Caltech (as of 4/11), Cornell (as of 4/22), Dartmouth, Georgetown, Harvard (as of 4/11), MIT, Yale
- Regionally, some HEIs are removing the requirement for good:
  - Northern Illinois University, Worcester Polytechnic Institute
- Regionally, some HEIs are returning to test-required policies:
  - Georgia, Georgia Tech, Purdue, UTK (Knoxville, TN), UTexas-Austin
- Currently, with limited exception, all Indiana HEIs are offering test-optional to prospective students

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