Predictive Analytics, Digital Feedback, and Student Support: Extremely Early Support Innovation

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Our Team

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- Rebecca Kaminsky
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- Robert Melendez
  - Title: Counselor, Chair of the School of Guidance and Counseling
  - Role: Liaison for counseling and support services

IVC's History with Early Alert (1.0)

- SARS Alert
  - Allowed faculty to mark/input concerns on students who were struggling. Information was forwarded to counseling for follow-up with the students.
  - Barriers to successful implementation:
    - SARS Alert was a separate system outside of what faculty used on a daily basis.
    - System was limited to what could be customized.
    - Only allowed for negative feedback.
  - Final Results of SARS Alert:
    - Limited faculty participation
    - Limited data collection (?)
    - Limited information to assist counselors

Early Alert 2.0 = Extremely Early Support Innovation (EESI)

- Collaborative Effort
  - Team made up of faculty, staff, and administrators
  - Sought consensus across campus & district
    - Attended department and school faculty meetings
    - Presented during IVC's Flex Week
    - Faculty & staff from IVC & Saddleback collaborated
    - Encouraged all faculty to participate in the pilot
    - Pilot group was given the opportunity for feedback on the system and desired changes
    - Consistent emails outlining progress each semester
  - Funded by Student Success and Support Program (SSSP)
  - Developed as a project as part of Leading from the Middle

EESI =
Data driven

THE MURKY MIDDLE

Profiling campus segments based on early academic performance to determine which students succeed, which fail, and **where schools should focus their efforts**

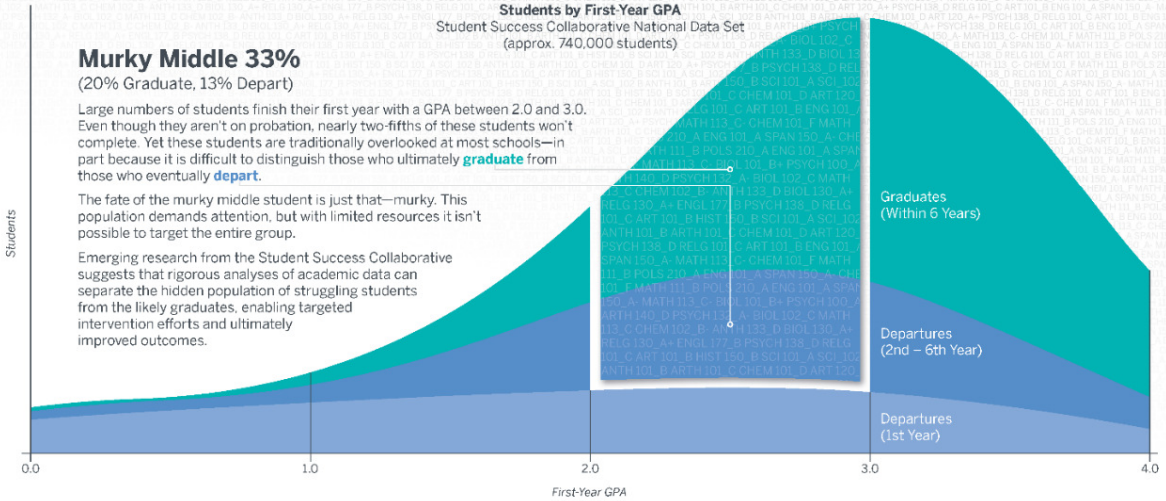
Most student success initiatives target freshman students, but 52% of attrition occurs after the first year. And of these late stage departures, over half are within the "Murky Middle."

Where are you focusing your student success efforts?

Phoenixes

Despite facing early challenges, these students are able to course correct and ultimately graduate. Unfortunately, fewer than one in ten students who finish their first year below a 2.0 GPA will eventually right the ship, despite considerable investment from their institutions.

Students by First-Year GPA
Student Success Collaborative National Data Set
(approx. 740,000 students)



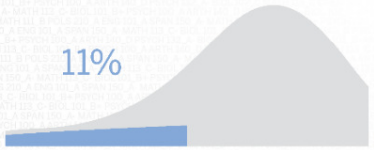
Murky Middle 33%

(20% Graduate, 13% Depart)

Large numbers of students finish their first year with a GPA between 2.0 and 3.0. Even though they aren't on probation, nearly two-fifths of these students won't complete. Yet these students are traditionally overlooked at most schools—in part because it is difficult to distinguish those who ultimately **graduate** from those who eventually **depart**.

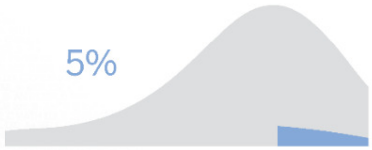
The fate of the murky middle student is just that—murky. This population demands attention, but with limited resources it isn't possible to target the entire group.

Emerging research from the Student Success Collaborative suggests that rigorous analyses of academic data can separate the hidden population of struggling students from the likely graduates, enabling targeted intervention efforts and ultimately improved outcomes.



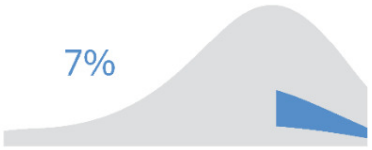
Failed to Launch

These students fail to hit the ground running and struggle in the initial phase of college. More than three-fifths of the students who finish their first year with a GPA below 2.0 don't make it back as sophomores despite extensive investments and efforts on their behalf. Schools may want to consider re-allocating energy toward a group of students more likely to complete, like the Murky Middle.



The Ones That Got Away

Anecdotal evidence suggests that the vast majority of these students are transferring to and graduating from other institutions after the first year. Most institutions would love to retain these high-performing students and don't want to see them enroll with a competitor. Though many in this group leave due to fit, the question remains whether more customized support could help retain a portion of these strong students.



Unsolved Mysteries

Sometimes even the best students won't complete. It can be hard to isolate the cause of attrition for this group of delayed departures. Perhaps they decide to transfer, encounter personal hardship, or are unable to persist due to finances. Whatever the reason, it isn't showing up in their academics, leaving many institutions wondering how they can be reached and whether this group's attrition is ultimately outside of their control.

All-Stars

Three-fourths of students who make it to their second year with above a 3.0 GPA go on to graduate. While anecdotally we know these students aren't at risk, they tend to consume considerable advising resources through voluntary self-improvement efforts. This has prompted a national dialogue about understanding student self-direction.

Education Advisory Board — Student Success Collaborative

Note: All references to graduation are for a six year graduation time frame. Not included in this graph are the 4% of students who persist, see their sixth year outcome unidentified).
The above graphic is kernel density estimation using Student Success Collaborative's National Data Set of approximately 740,000 students.

See more from the Murky Middle Project
eab.com/ssc/murkymiddle

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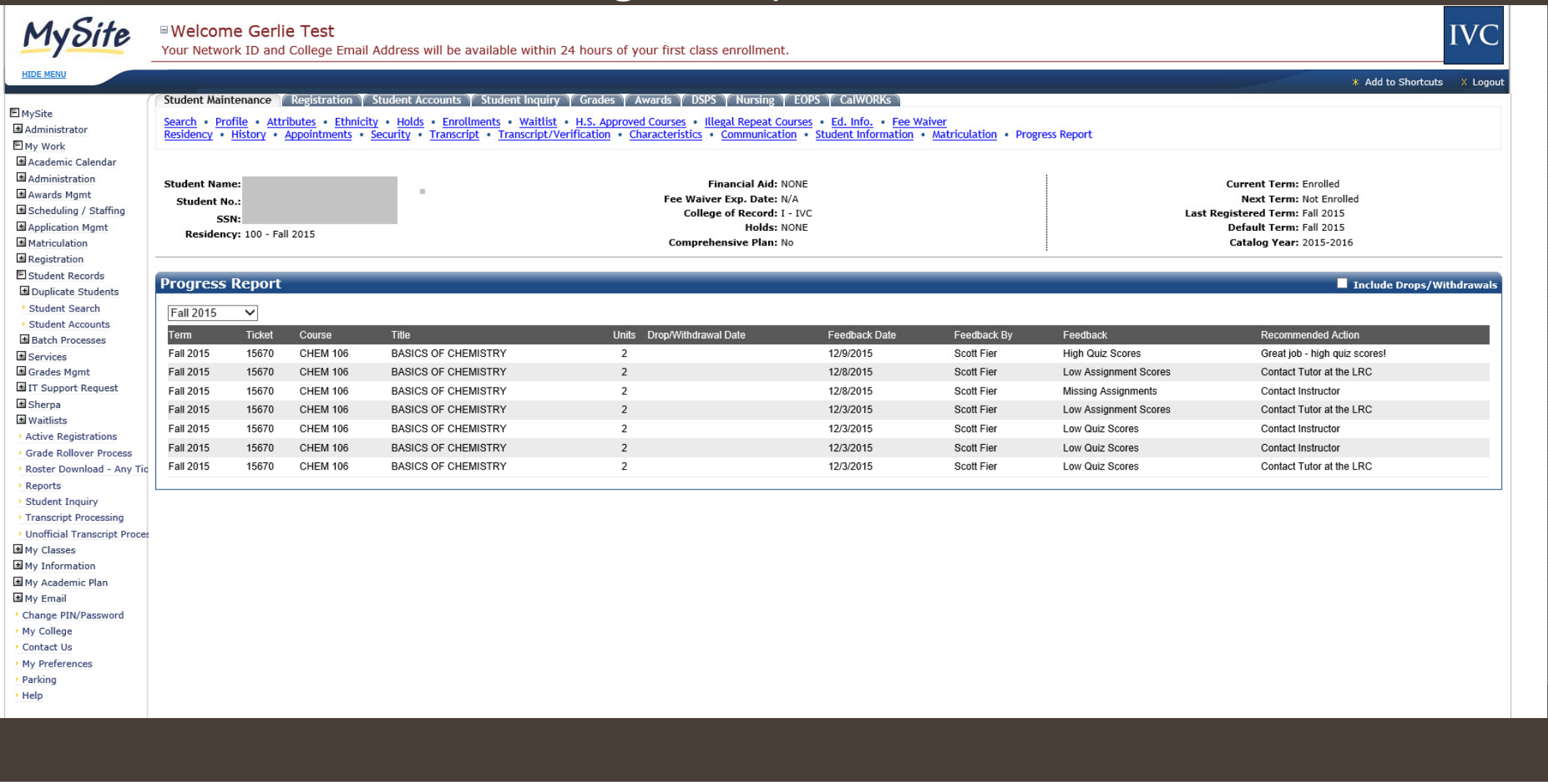
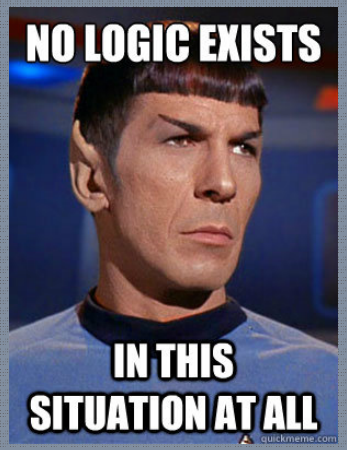
EESI planning

- Timing:
  - Extremely Early (application and pre-enrollment)
    - Predictive analytics
  - During Semester
    - How Works/Demo
      - MySite interface
    - Interface with Support Services
      - What faculty members see and do
      - What support services see and do

Progress report interface



EESI Logic Model



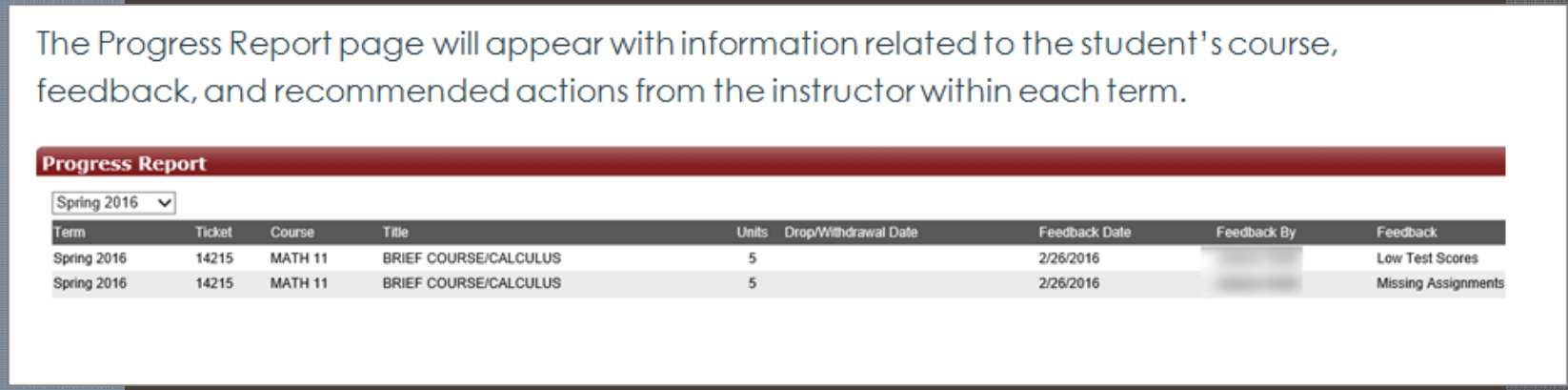
Students and counselors receive nudges

Can review and address concerns

Disaggregated reports available (e.g., EOPS, Athletes, etc.) for research, planning and improvement

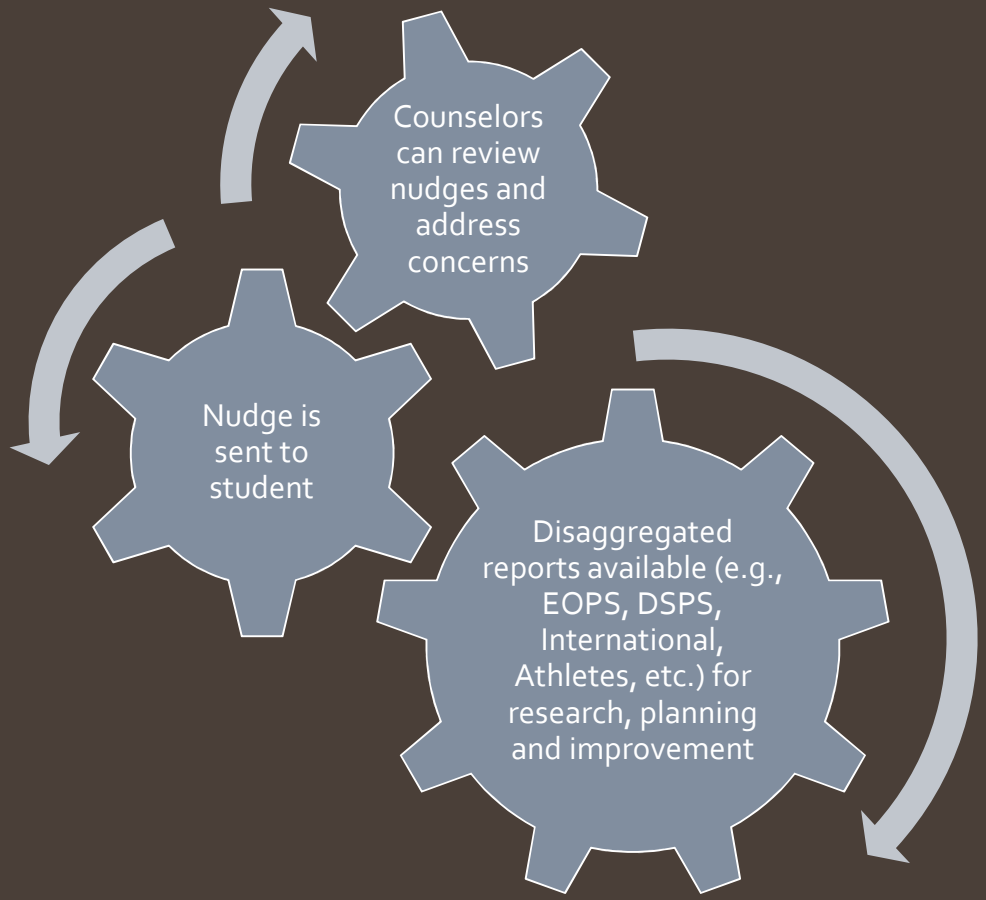
Progress report interface for Counselors

- Progress Report page appears with information related to the student's course, feedback, and recommended actions from the instructor within each term.

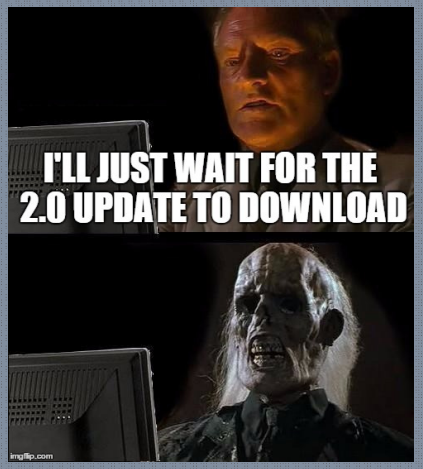


E.E.S.I. (2.0)

U KNOW WHAT REALLY GRINDS MY GEARS?
MY GEARS
COG WHEELS!
imgflip.com

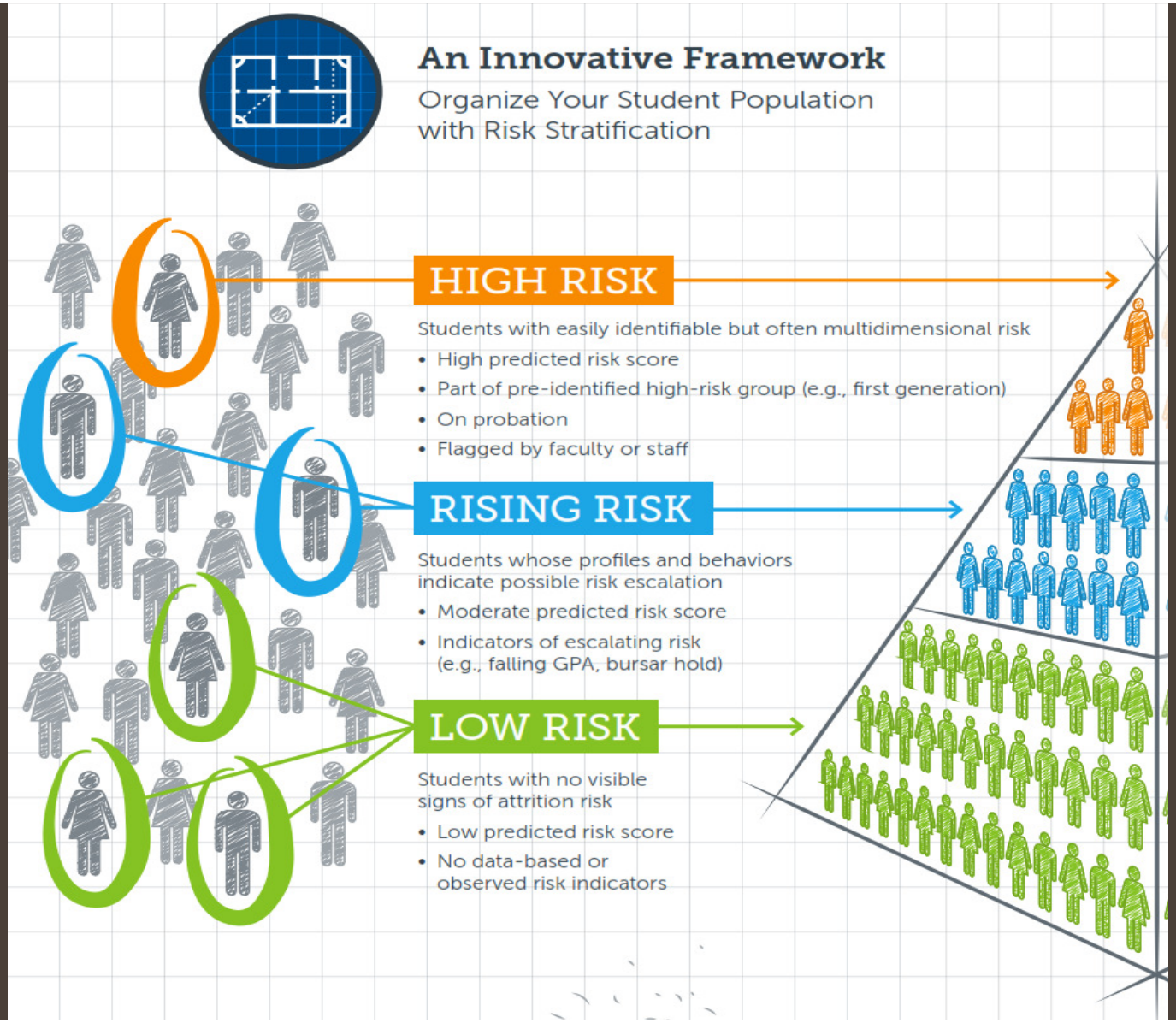

Counselors can review nudges and address concerns
Nudge is sent to student
Disaggregated reports available (e.g., EOPS, DSPS, International, Athletes, etc.) for research, planning and improvement

Early Alert 2.0 = EESI (cont.)



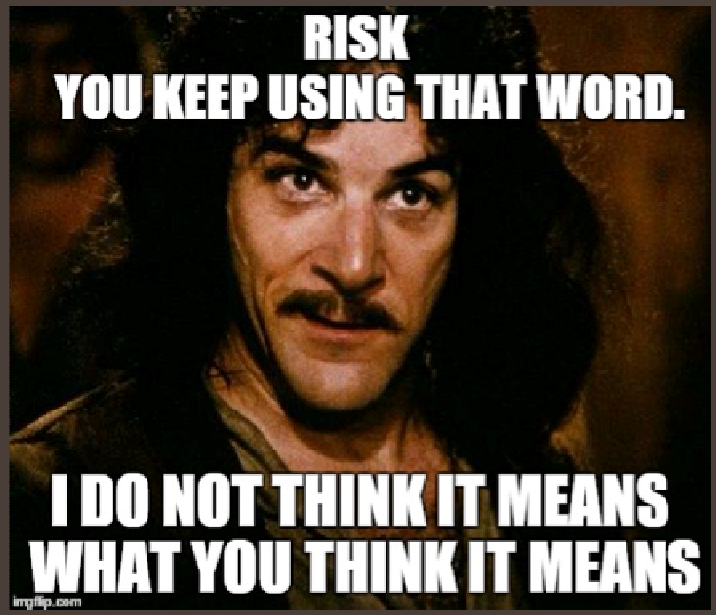
- Messaging:
  - Nudges
    - Positive
    - Negative
    - How written
    - Evaluation of impact (Craig)
      - Conducting a propensity score match to control for differences between those who receive Progress Report nudges and those who don't
      - No significant differences, yet
      - Analyses will continue with additional refinements
        - Adding controls for teacher grading variability

Predictive Risk Stratification



Predictive Risk Stratification

- High Risk
- Medium Risk
- Low Risk



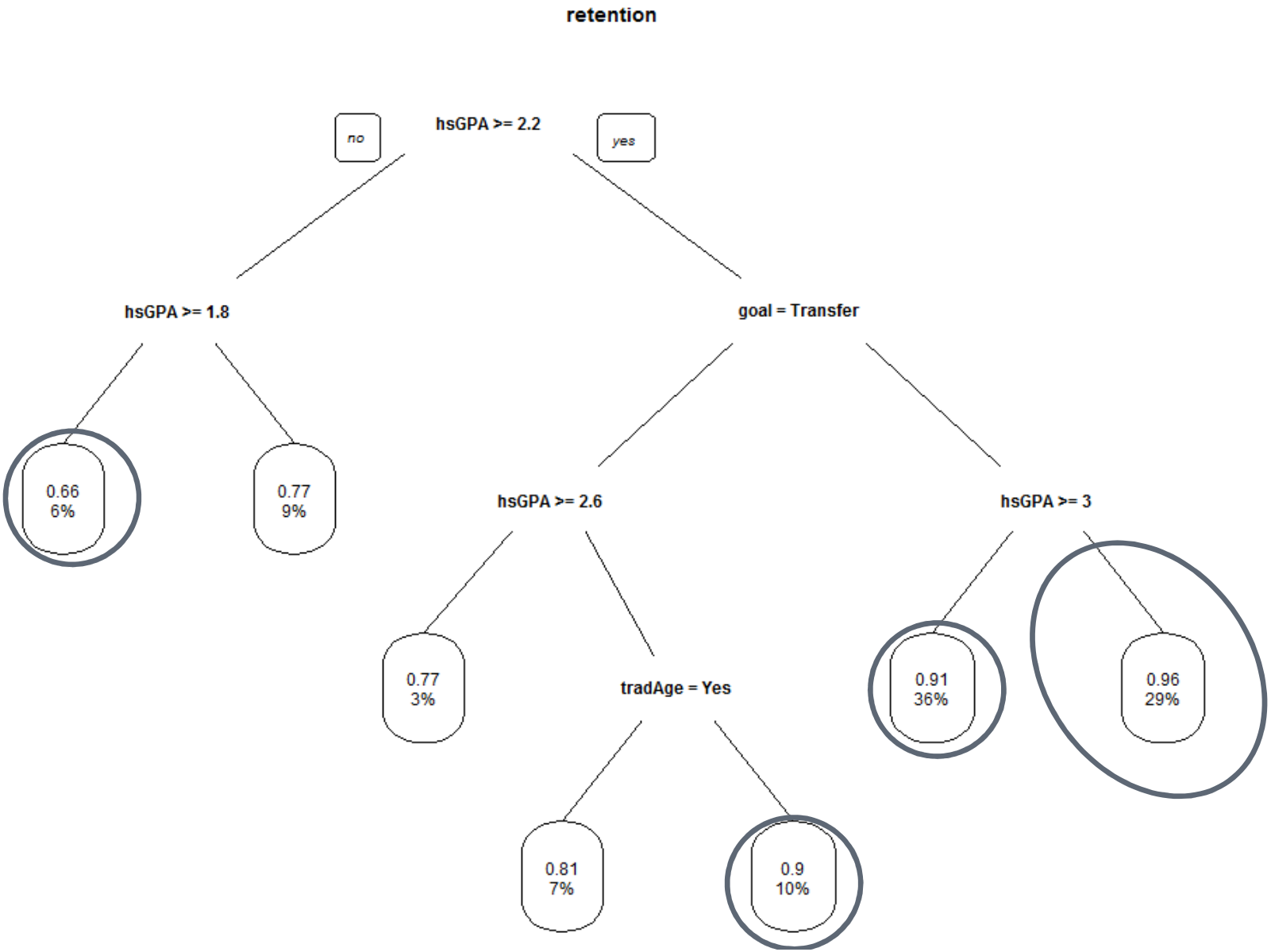
Components of an extremely early predictive model

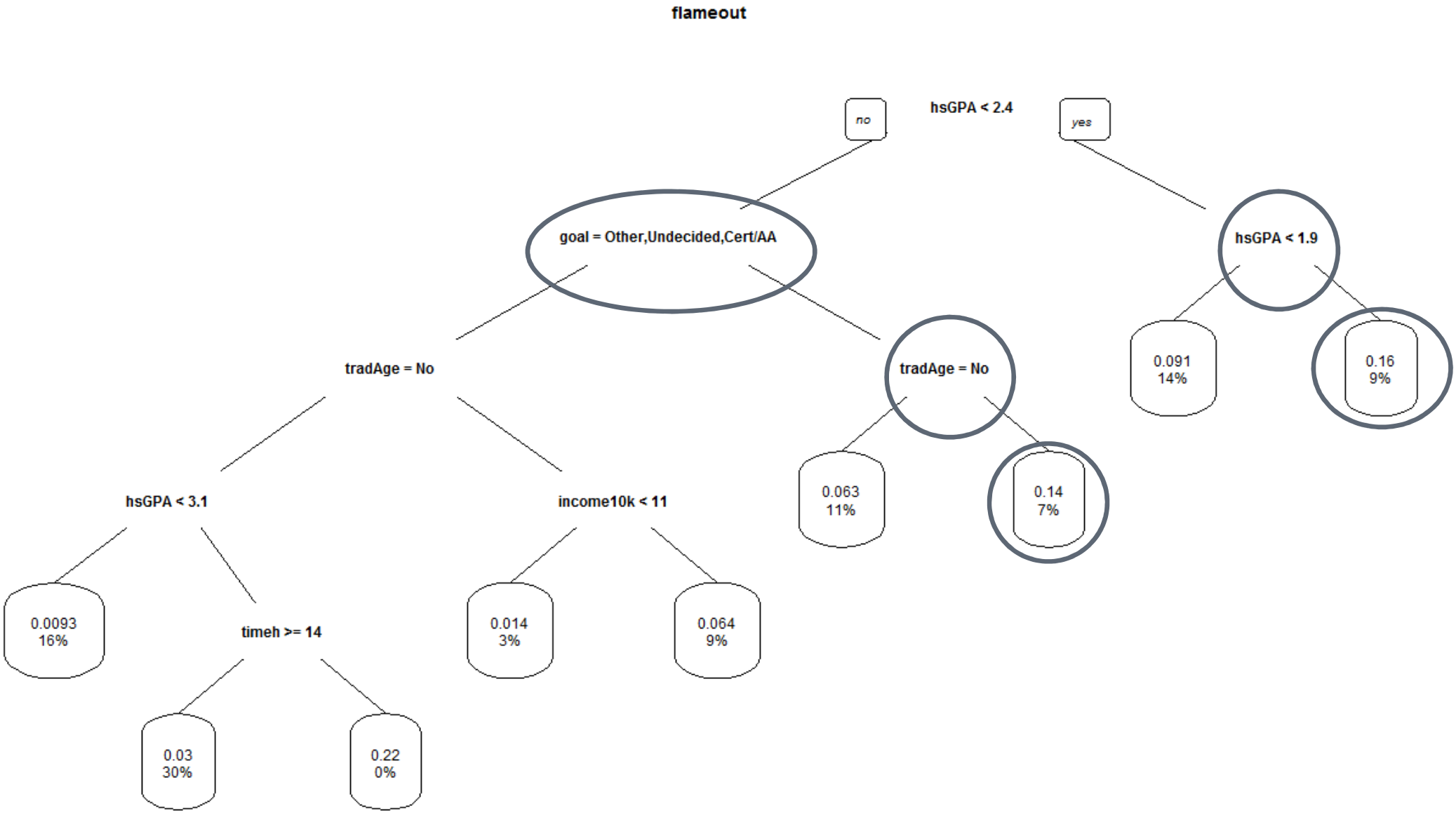
Early Predictors

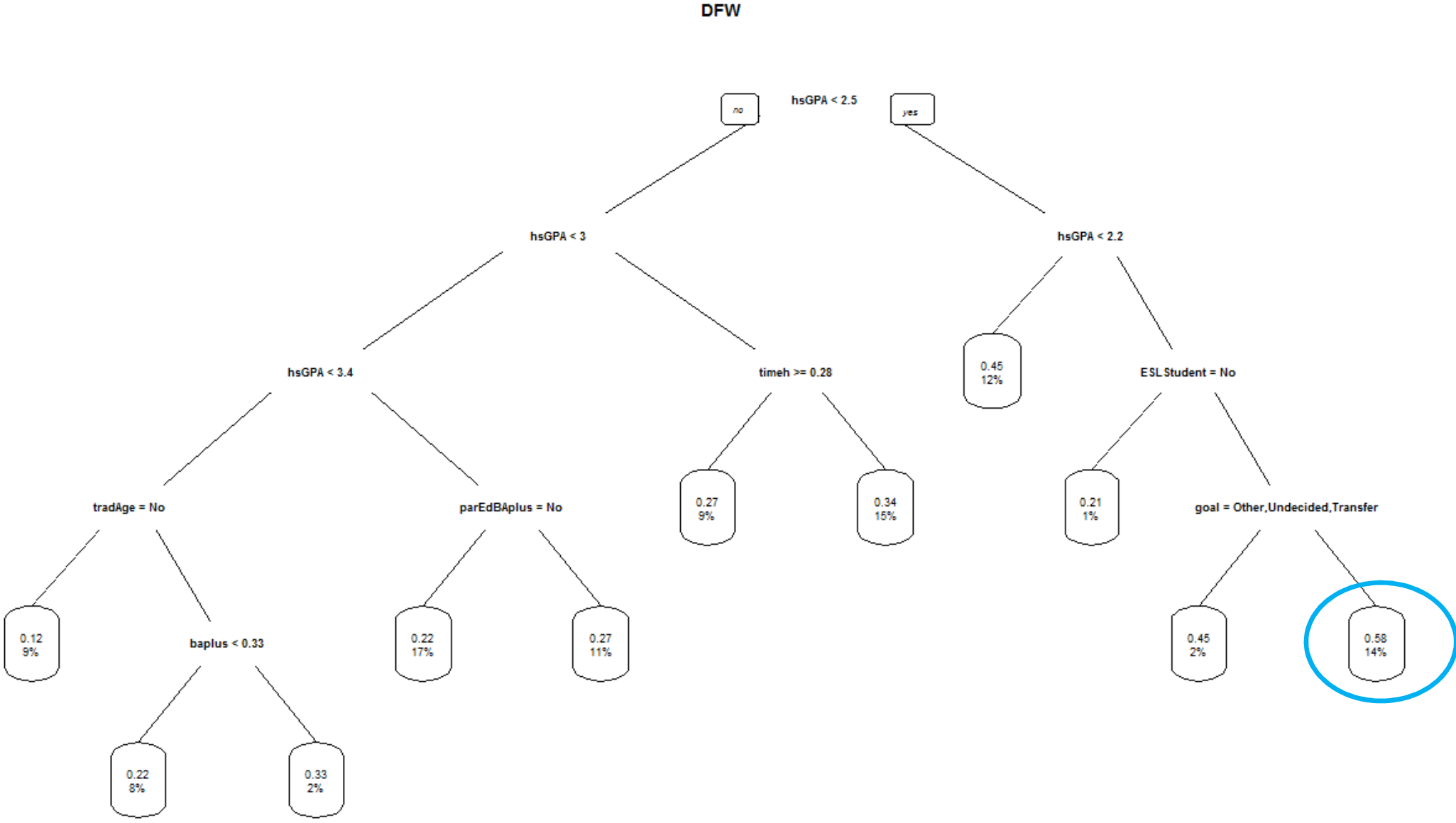
- First generation college student
- High school GPA
- Educational goal
- Traditional age or not
- Income
- ESL student
- From local feeder
- Time to campus
- International student
- High school graduate
- Bachelor's or higher

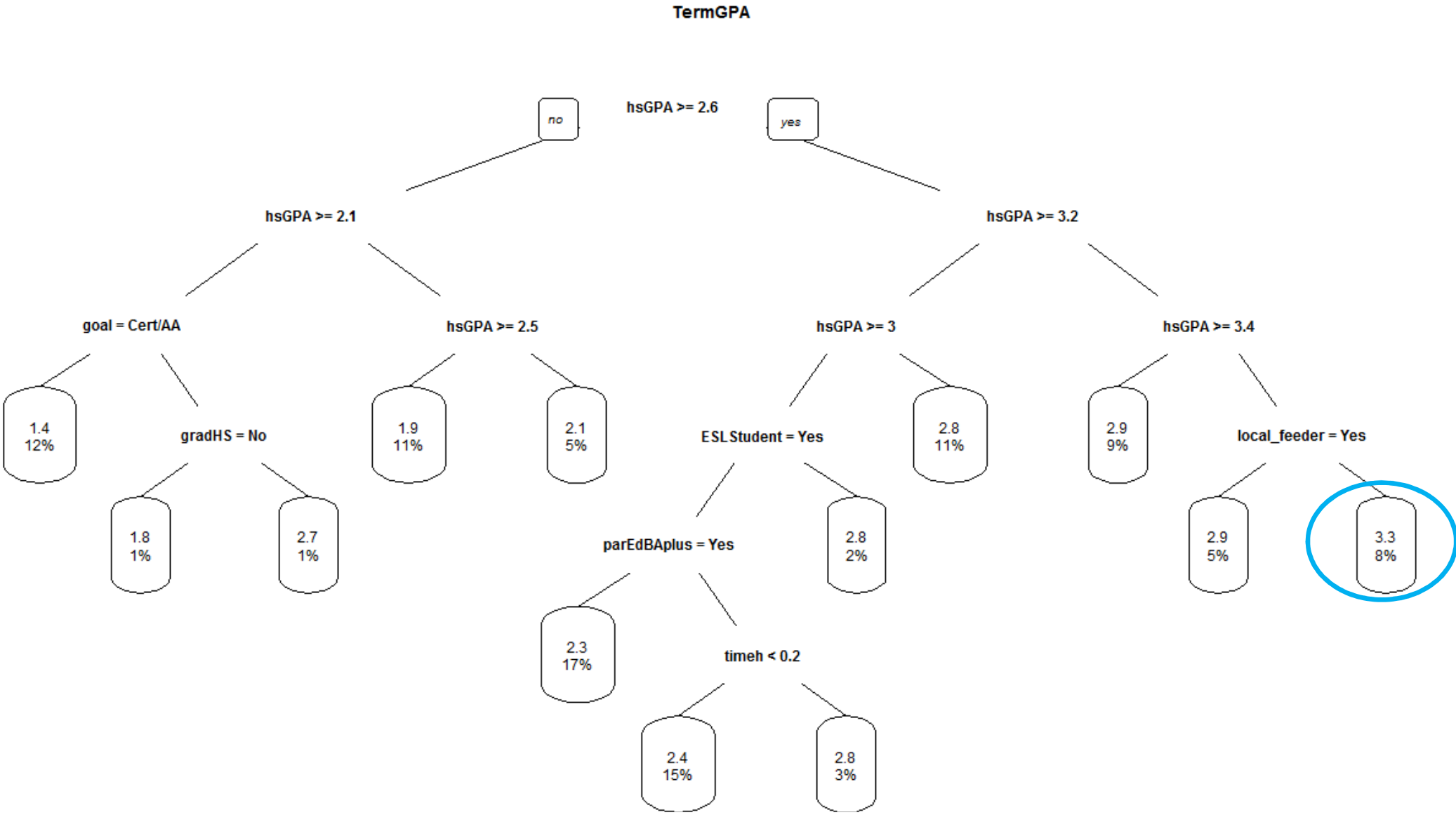
Outcomes

- Withdrew from any class
- DFW in any class
- No course completed
- Flameout
- Retention
- Term GPA
- Term units earned
- Persistence

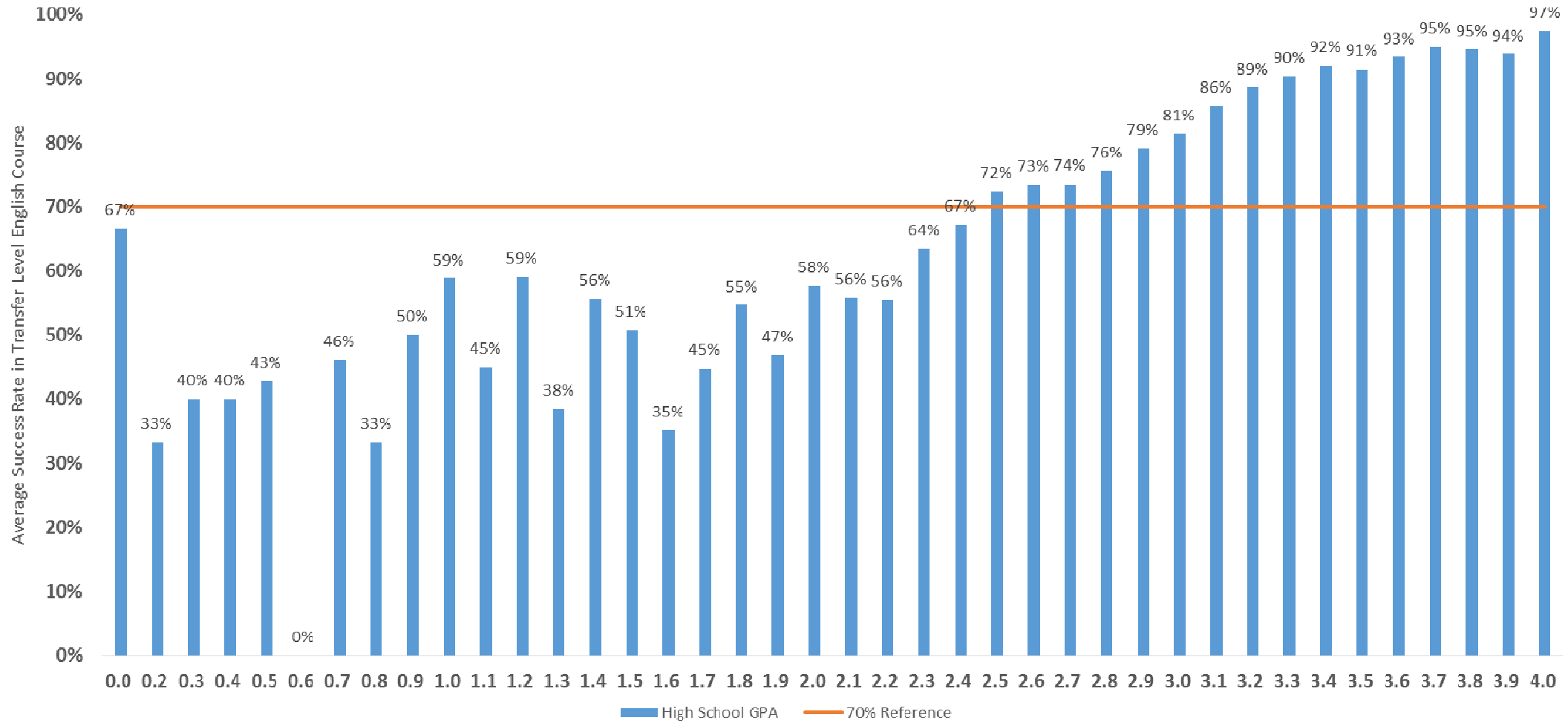

retention
hsGPA >= 2.2
no
yes
hsGPA >= 1.8
goal = Transfer
0.66
6%
0.77
9%
hsGPA >= 2.6
hsGPA >= 3
0.77
3%
tradAge = Yes
0.91
36%
0.96
29%
0.81
7%
0.9
10%


flameout
hsGPA < 2.4
no
yes
goal = Other,Undecided,Cert/AA
hsGPA < 1.9
tradAge = No
tradAge = No
0.091
14%
0.16
9%
0.063
11%
0.14
7%
hsGPA < 3.1
income10k < 11
0.0093
16%
timeh >= 14
0.014
3%
0.064
9%
0.03
30%
0.22
0%

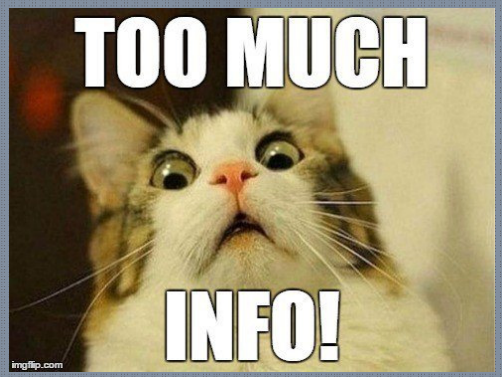

DFW
no
hsGPA < 2.5
yes
hsGPA < 3
hsGPA < 2.2
hsGPA < 3.4
timeh >= 0.28
0.45
12%
ESL Student = No
tradAge = No
parEdBAplus = No
0.27
9%
0.34
15%
0.21
1%
goal = Other,Undecided,Transfer
0.12
9%
baplus < 0.33
0.22
17%
0.27
11%
0.45
2%
0.58
14%
0.22
8%
0.33
2%


TermGPA
hsGPA >= 2.6
no
yes
hsGPA >= 2.1
hsGPA >= 3.2
goal = Cert/AA
hsGPA >= 2.5
hsGPA >= 3
hsGPA >= 3.4
1.4
12%
gradHS = No
1.9
11%
2.1
5%
ESL Student = Yes
2.8
11%
2.9
9%
local_feeder = Yes
1.8
1%
2.7
1%
parEdBAplus = Yes
2.8
2%
2.9
5%
3.3
8%
2.3
17%
timeh < 0.2
2.4
15%
2.8
3%

HSGPA and Transfer Level English Success Rates



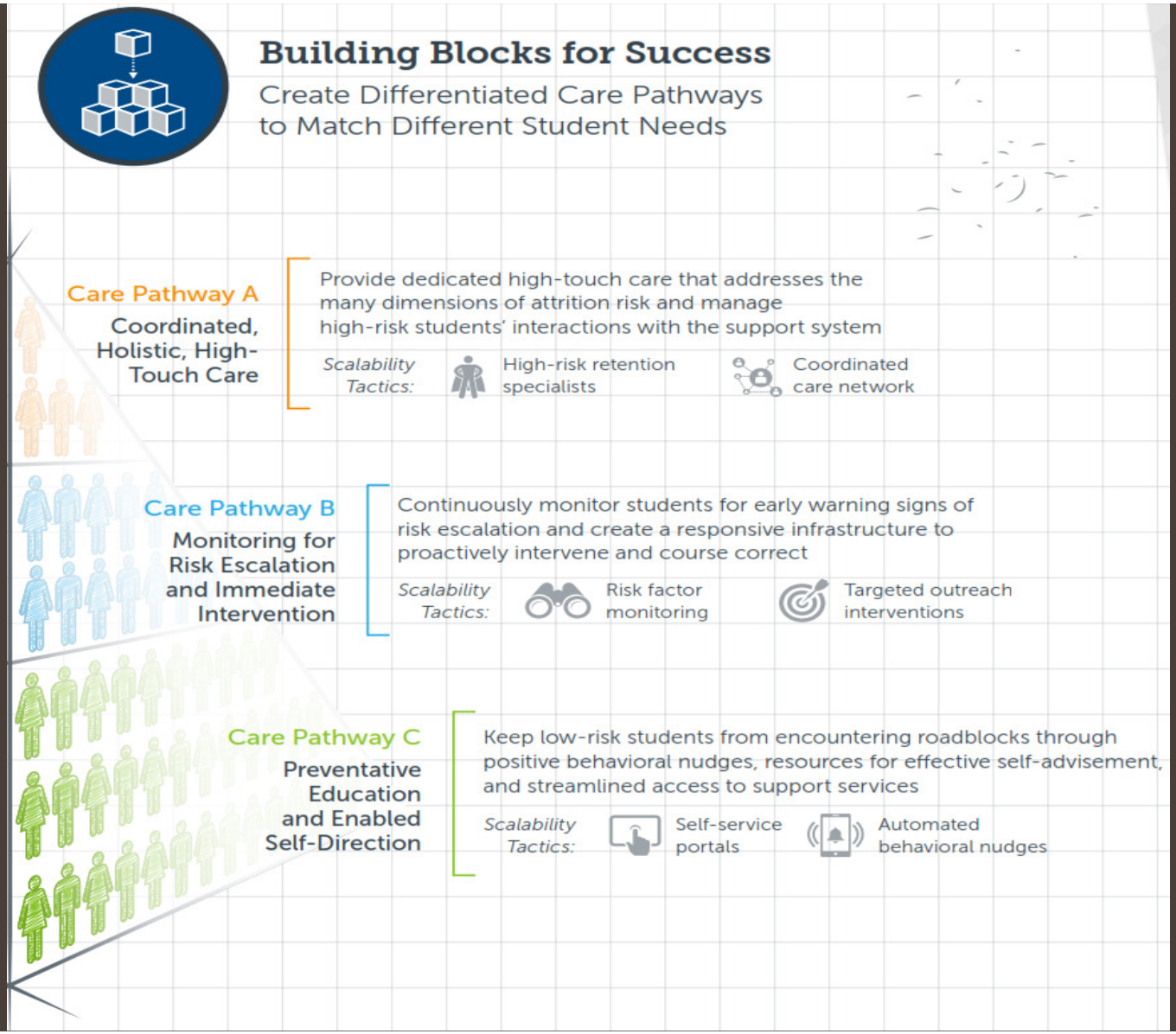
Predictive Risk Stratification (cont.)



- What do we plan to do with it?
  - Match messaging and interventions to risk level
  - Create a success pathway (i.e. additional workshops, counseling appointments, direct communication from support services) for students who are identified as needing more support.

Predictive Risk Stratification (cont.)

*we warned you on the last slide…



Predictive Risk Stratification (cont.)

- Care Pathway A = High touch
- Care Pathway B = Active monitoring
- Care Pathway C = Enabling engagement

DO YOU HAVE ANY
"QUESTIONS"
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