


Testing the Impact of Psychological Interventions on Student Academic Performance and Retention

Students in Transition Conference

Indianapolis, Indiana

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Presentation Outline

- I. Context for psychological interventions for student success
- II. ISU's First-in-the-World grant project
- III. Under the hood of the app project
- IV. Initial data results
- V. Discussion & Opportunities

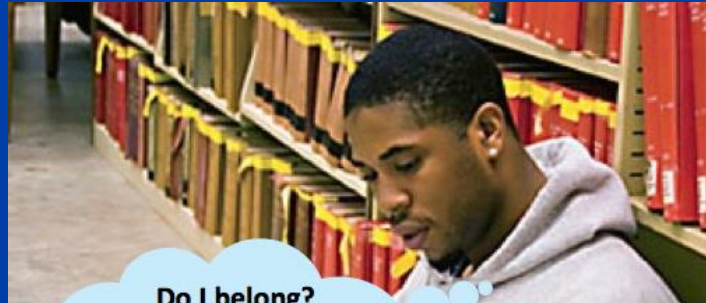


**First in the World
Program**



**Indiana State
University**

Context for Psychological Interventions & Student Success



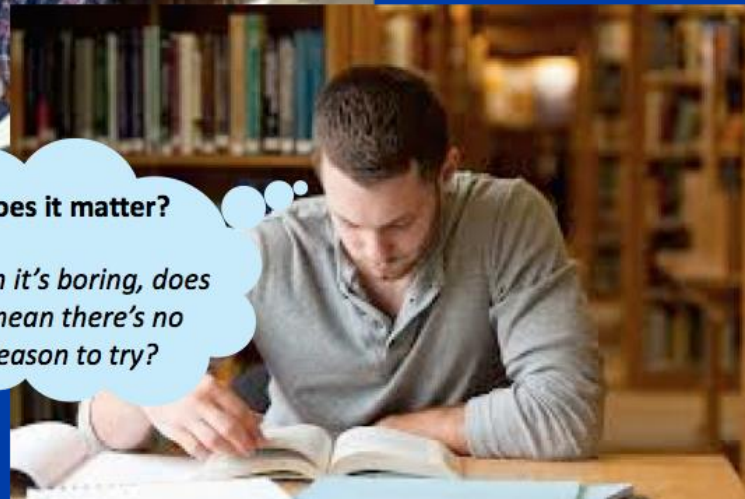
Do I belong?

When I feel lonely (or disrespected, etc.), does it mean I don't belong?



Can I do it?

When it's hard, does it mean I can't do it?



Does it matter?

When it's boring, does it mean there's no reason to try?



Short Exercises Can Help Students Answer These Questions in Productive Ways (and raise achievement, especially for at-risk students)

- **Social-Belonging** (Walton & Cohen, 2007, 2011)
 - *Everybody worries at first about whether they belong but eventually they come to feel at home*
- **Purpose** (Yeager et al., 2014; see also Hulleman & Harackiewicz, 2009)
 - *Even when the work is boring, it can help you become the kind of person you want to be*
- **Wise Feedback** (Yeager et al., 2013)
 - *When you receive critical feedback, it doesn't mean the evaluator is biased -- it means they have high standards and believe you can reach them*
- **Growth Mindset** (Aronson et al. 2002; Blackwell et al., 2007; Good et al., 2003)
 - *Struggle means you're learning -- not that you've reached your limit*



College Transition Collaborative (CTC)

www.collegetransitioncollaborative.org

Research-practice partnership that brings together pioneering social psychologists, education researchers, and higher education practitioners to create learning environments that produce more equitable higher education outcomes.

Focuses on moments of psychological friction in transition to and through college.

The College Transition Collaborative (CTC)



University of Pittsburgh



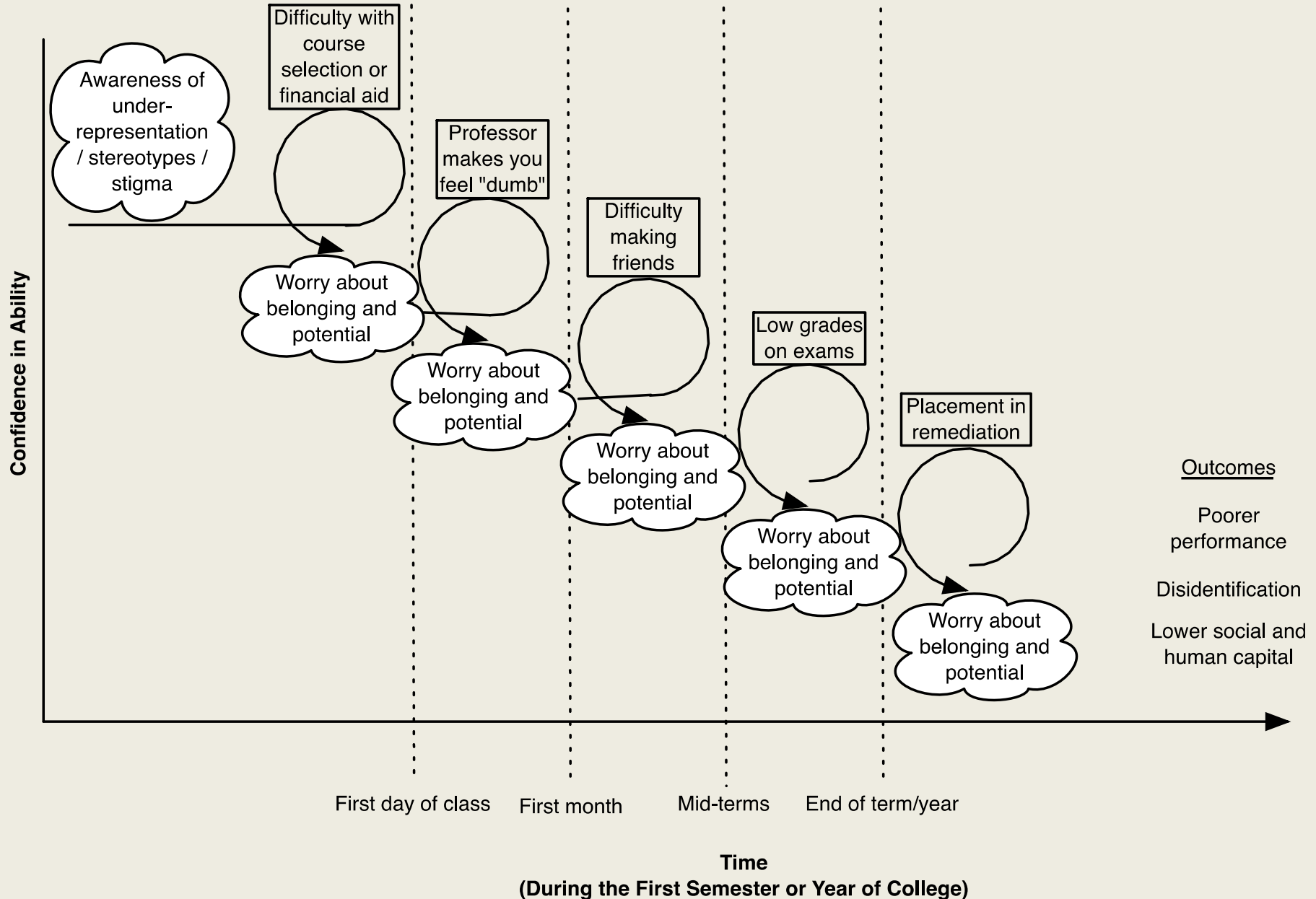
40+
schools

40+
liaisons

100K+
students

\$4.5M
(and growing)

Social Psychological Approach to College Success





College Transition Collaborative (CTC)

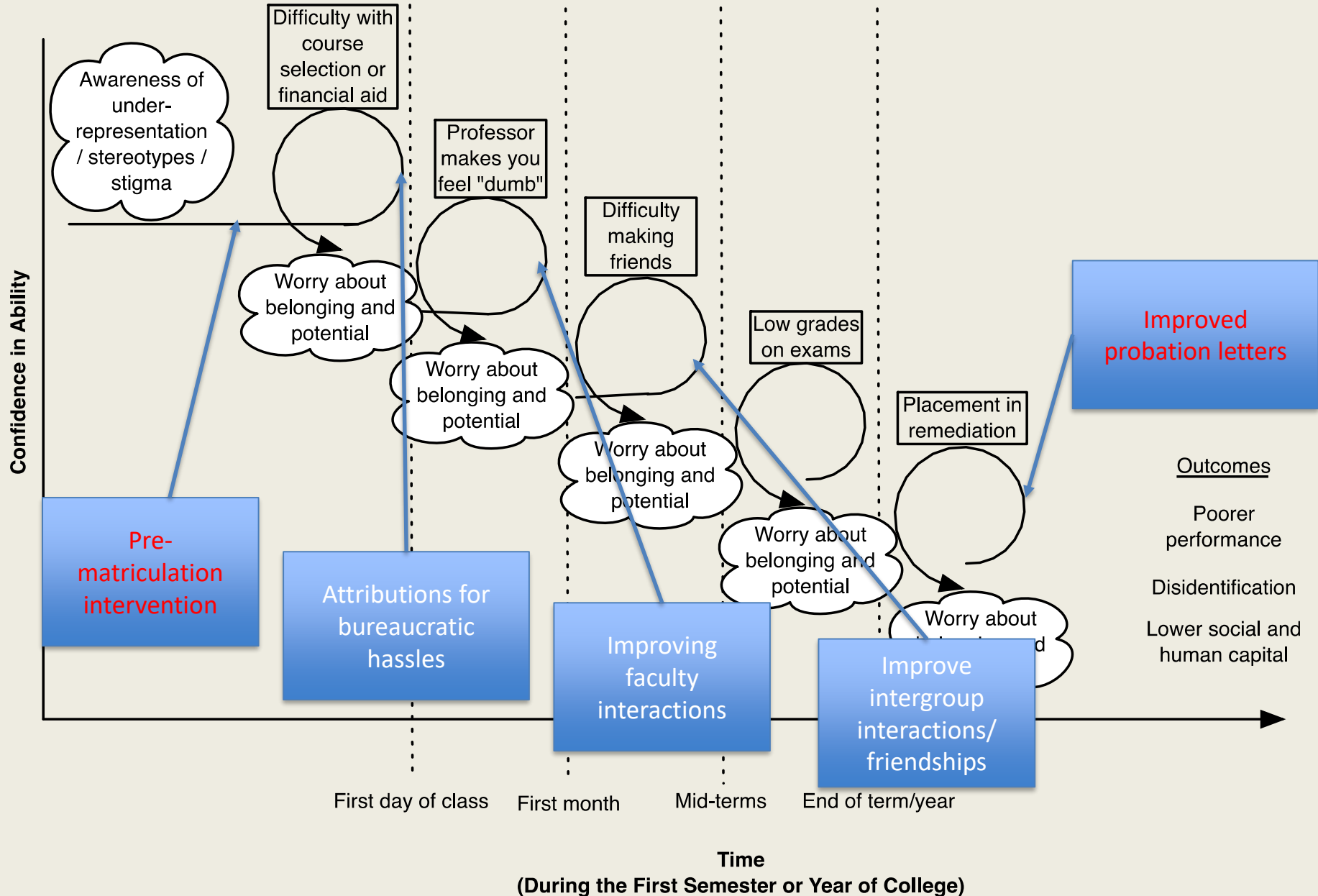
Project 1: Largest RCT of social belonging intervention

- Examines heterogeneity of effects (college type, selectivity, student body characteristics)
- 23 universities; 40,000+ students

Project 2: Probation project

- Psychologically attune the probation notification process
- 9 university RCT; 1300 students

CTC's Approach to College Success



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Wise Feedback (Yeager et al., 2013)

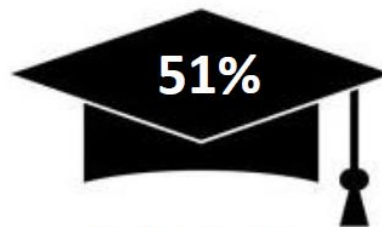
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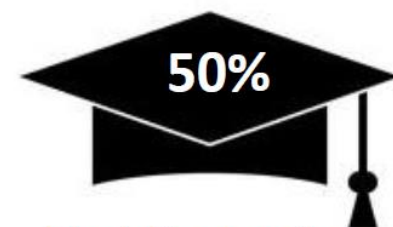
- *Struggle means you're learning -- not that you've reached your limit*

Brief on Indiana State University

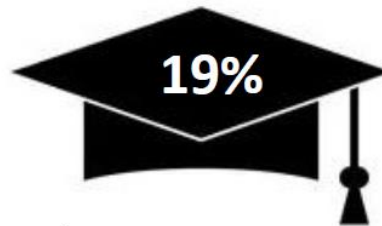
2018 Freshman Class



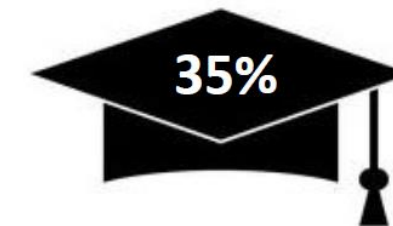
Pell Eligible



First Generation



21st Century Scholars

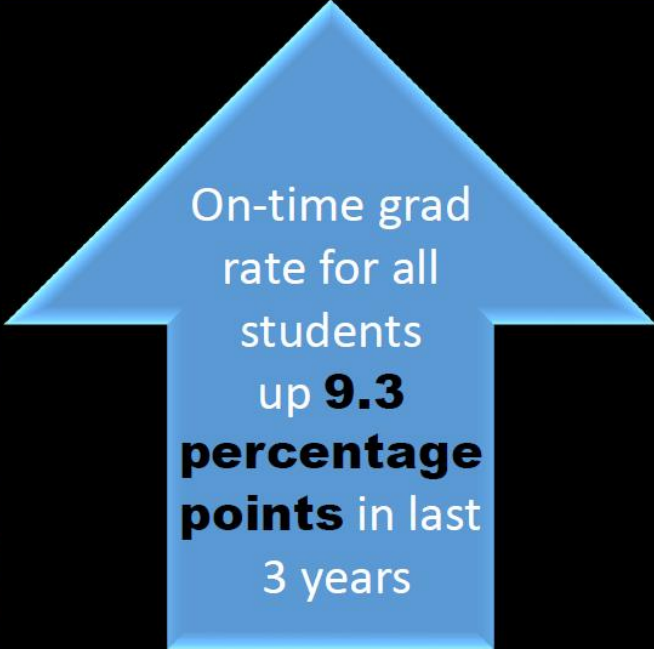


Minority

Approximately 1,300 total students



The Indiana State Completion Agenda



On-time grad
rate for all
students
up **9.3**
percentage
points in last
3 years

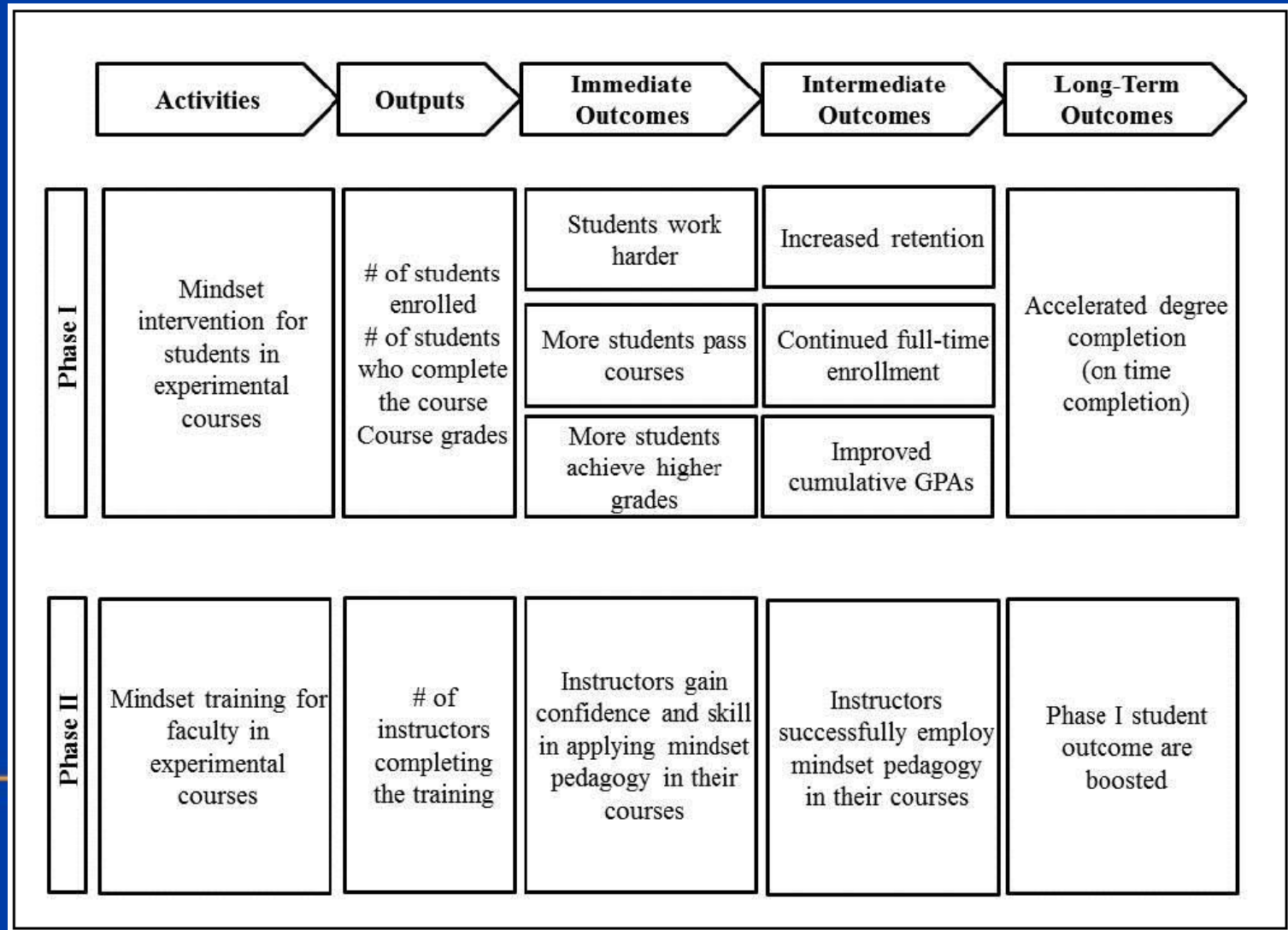
**Student Success =
Degree Completion**



Indiana State University defines its excellence
not by who it excludes but by who it includes
and the kinds of opportunities received.

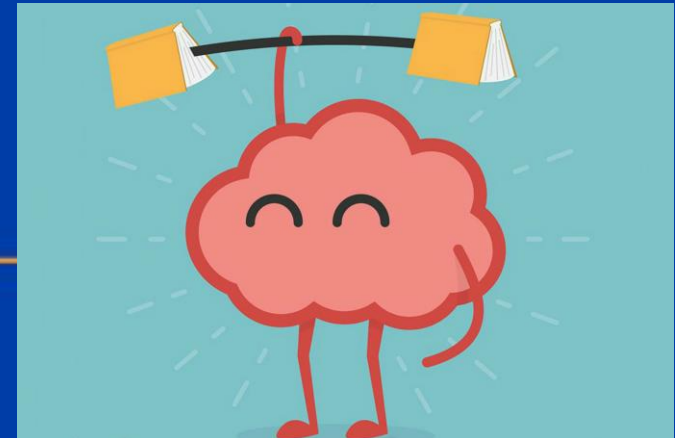
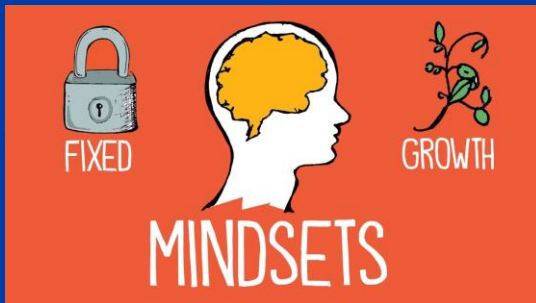


Brief on ISU's First-in-the-World Grant Project



Results 2015-16 & 2016-17 AY

- Tested in 3 levels of math (remedial, basic, advanced) and later Psychology 101.
- *Singular intervention*: Adaptations of reading an article on how brain can grow through hard work; writing a letter to a new freshmen offering advice on how to do well in that course.
- Results: NS





Deployment Redesign Fall 2017 – Weekly “Doses”

- Nudges deployed via an interactive app

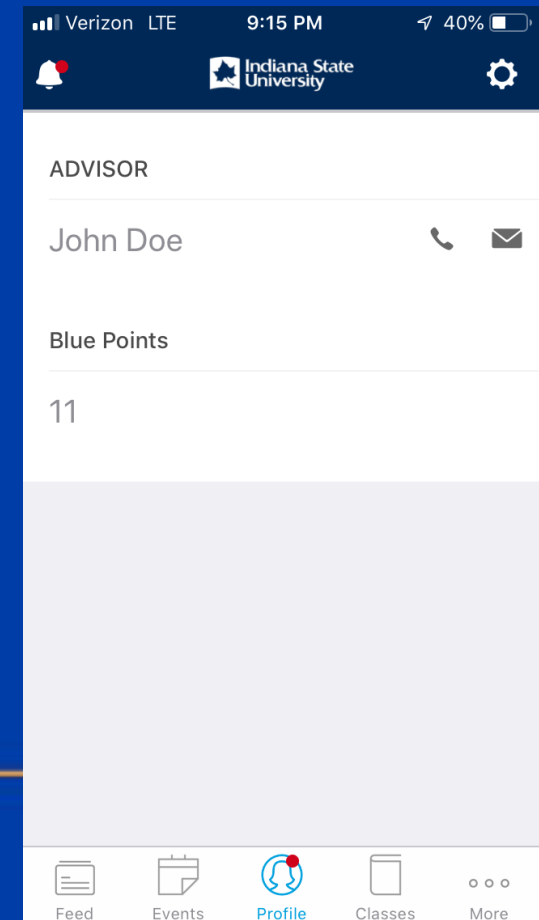


- 2,171 new freshmen invited to download app
- Customizable messaging, useful info for students; Commons Cash balances
- 674 adopters; ½ assigned to treatment condition and ½ to control condition



App Adoption and Usage Incentives

- Messaging from Dean of University College at start of term
- Free-t-shirts and other giveaways
- BLUE Points (for clicks)
 - Notifications
 - Announcements
 - Polls



Sample Messaging

Sycamore Focus

Just Now



What is a Growth Mindset versus a Fixed Mindset?

Learn more by following the 'Read More' link!

[Read More](#)

*Preview may not reflect all screen sizes and resolutions.

Sycamore Focus

Private

We all have a fixed mindset from time to time. What steps do you need to take to interrupt your

Choose One

- ☐ I want to start trusting myself more
- ☐ I want to pay attention and identify
- ☐ I want to start practicing more

Sycamore Focus

Just Now



What I wish I knew starting at ISU: Advice from a graduating

Read a short blog post about a senior student's advice for incoming students...

[Read More](#)

and resolutions.

9:00

Thursday, October 4

Indiana State APP

Just Now

Win Commons Cash!

Click on "Sycamore Focus" announcements and polls! \$20 Commons Cash winners selected on Oct. 17. The more clicks increase your chances for winning the grand prize drawing for an Apple Wat...

Slide for more



App Pilot Assessment –Survey Data

- On a scale of 1 (least likely) to 10 (most likely), with regard to recommending it to a friend, the average was 7.62.
- 93% felt more connected to campus life as a result of the app.
- 86% got info on activities/events they felt they wouldn't have heard about.
- 70% attended an event that was stimulated by Blue Mobile.
- 70% used Blue Mobile weekly; 16% said daily; 12% monthly.



App Pilot Assessment –Focus Groups Data

- It's super helpful! I like the surveys and quizzes.
- BLUE mobile app is informative with things going on around ISU.
- The BLUE mobile app has connected me to campus considering I'm a freshman.
- I met friends through an event I found through the app.
- Seems when I am down, I get a message that makes me feel better.
- Love that I can see my Commons Cash balance.



App Pilot Assessment - Outcomes Analyses

- **Outcomes:** Term GPA, Term Earned Hours, Fall to Spring Retention
- **Controlled for:** Pell Status, HS GPA, Minority Status
- **Analysis 1** (GM App vs. Regular App adopters): ANCOVA analyses revealed no significant differences on outcomes. **Tentative Conclusion:** Either nudge interventions equally good or not sufficiently distinct.



App Pilot Assessment - Outcomes Analyses

- **Analysis 2** (combined app adopters vs. non-adopters): ANCOVA results with highly significant differences ($p < .001$) on *term GPA* and *term earned hours*.
- **Practical Impacts:**
 - Average term GPA for app adopters .23 GPA points higher than non-app adopters.
 - App adopters earned on average 1.05 more credits than non-app users, a monetized cost of just over \$316 (the per credit hour tuition rate).
 - Annual differences (up or down) in these metrics across the campus would typically not be this large in a singular term or singular year.





App Pilot Assessment - Outcomes Analyses

- Analysis 3 (combined app adopters vs. non-adopters): Logistical regression results with highly significant difference ($p < .001$) on *retention to next semester*.
- **Practical Impacts:**
 - Average retention rate for adopters: 87.8%
 - Average retention rate for non-adopters: 74.7%



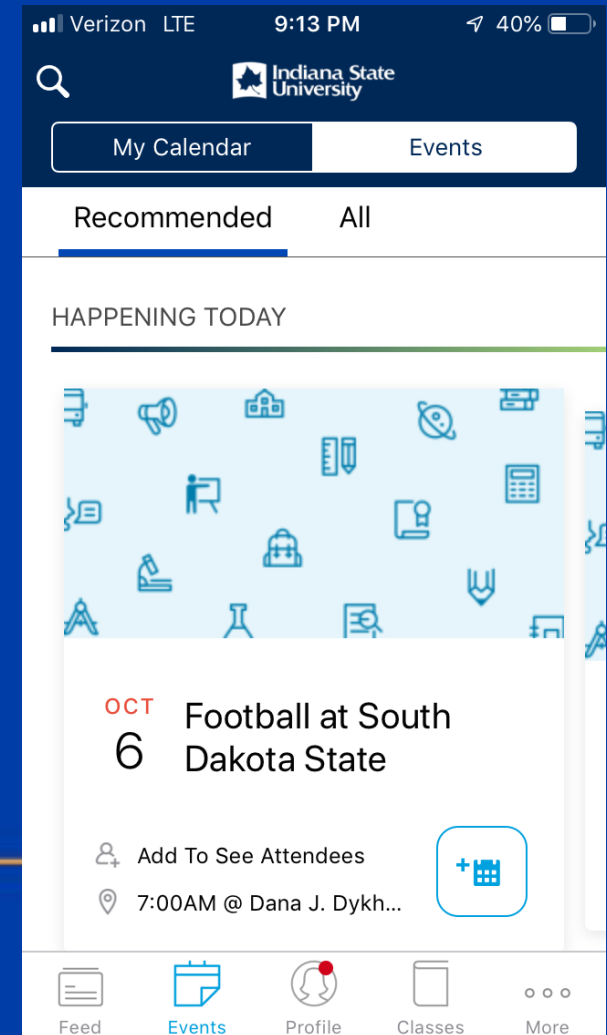


App Pilot Assessment - Outcomes Analyses

- Analysis 4 (combined app adopters): OLS regression analysis with *term GPA* and *credit hours earned* based on # clicks (i.e., points), proxy for depth of engagement. With *term GPA*, #clicks approached significance ($p < .1$). With *credit hours earned*, was significant ($p < .05$).
- Analysis 5 (combined app adopters): Logistical regression analysis with *retention to next semester*. # clicks not significant.

Conclusions from Adopter vs. Non-Adopter Outcomes Analysis

- Use of the app with any kind of psychological nudge may have positive benefits. OR
- Unmeasured factors account for the outcome differences. AND
- The depth of engagement may be important.



Current Project as Informed by Results

- Received 1-year grant extension from US-DOE
- 1,109 new freshmen adopters
- Randomly assigned to 3 groups:
 - *Treatment 1*: Growth Mindset Content
 - *Treatment 2*: Self-Control Content
 - *Treatment 3*: Neutral Content (not designed to stimulate a psychological reaction other than perhaps feeling good in the moment)





Discussion & Opportunities

- Are you using an app or any other tool designed to impact how students think about themselves?
- Your thoughts on noncognitive factors and the degree to which they can be triggered for good or ill?
- Discussion of examples of what we message to students with implications.

resilience
effort
growth mindset
self-efficacy
conscientiousness
emotional control
self control
perseverance
positive self-regard
confidence



Thank you

"Education is the
great equalizer."

Horace Mann



Please remember to submit your
evaluation on Guidebook!

<https://guidebook.com/g/sit2018/>