

Improvement Science with a Twist: Embedding an Experimental Test of Improvement Strategies into Routines of Practice

Rapid Learning: Methods for Testing & Evaluating Change in Social Service Programs
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BOLD THINKERS DRIVING
REAL-WORLD IMPACT



Graduate School of Education
Penn GSE



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Improvement Science with a Twist: Context

- Year Up- A Job Training Program
 - Target: low-income urban youth
 - Goal: employment & college persistence
 - Formats:
 1. Highly effective, costly stand-alone model- Fein, D. J. & Hamadyk, J. (2018).
 2. Lower cost, untested partnership model
- Challenge: Strong outcomes @ lower-cost
 - Enrollment targets
 - Course completion & skills mastery
 - Internship development & sales
- Complements to traditional implementation & impact evaluations

Blended Approach: IS, DBIR & RCT

- ❑ Identify “pain points” for the partnership model
- ❑ Develop promising improvement strategies
- ❑ Evaluate
 1. Professional judgments
 2. Monitoring & evaluation (M&E)
 3. Case studies
 4. Impact evaluation (RCTs)

Improvement Science with a Twist

- **Goal: Inform R&D of the Professional Training Corps Program Model**
 - Strong foundation
 - Normal range of problem spots & opportunities to build
- **Approach: Mini-studies focused on stakeholder priorities**
 - 3 traditional Improvement Science studies
 - Academic success & persistence through L&D
 - Academic persistence post program
 - Creating effective internships
 - 1 Improvement Science study with an embedded RCT
 - Personal & academic struggles; failing grades; attrition

Stages of Evaluation

□ Implementation Analysis (Traditional+ Micro-study)

- 1 cycle (~12 months)

□ Mini-studies

1: College persistence post-program

- 1 cycle (~3 months)

2: Creating successful internships

- 1 cycle (~3 months)

3: Improving academic success & persistence

- 2-cycles (~17 months)

□ Summative Impact Evaluation (Future)

- 2 cycles (~24 months)

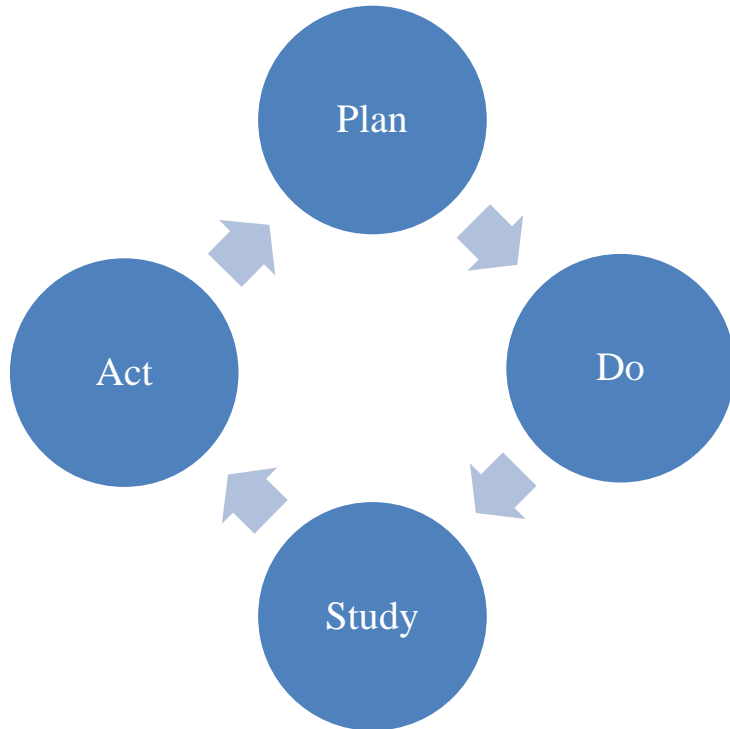
Studies 2 – 5

	Mini-Study 1 (Case Study)	Mini-Study 2 (Case Study)	Mini-study 3 Experiment)	Program Impact Evaluation
Focus	Internship development & quality	College persistence post-program	Improve academic outcomes & program L&D completion	Assess program effectiveness
Sites	Northern Virginia Miami-Dade Philadelphia	All PTC sites	Jacksonville New York Philadelphia	Bellevue Baltimore New York
Design	Descriptive case study	Descriptive data analysis & interviews	Random Assignment (alternative or usual services)	Random Assignment (Year Up or not)
Data	Interviews Focus groups	Administrative data NSC data* Interviews & focus groups	Administrative data Focus groups Observations & interviews	Administrative data NSC data Focus groups Observations & interviews

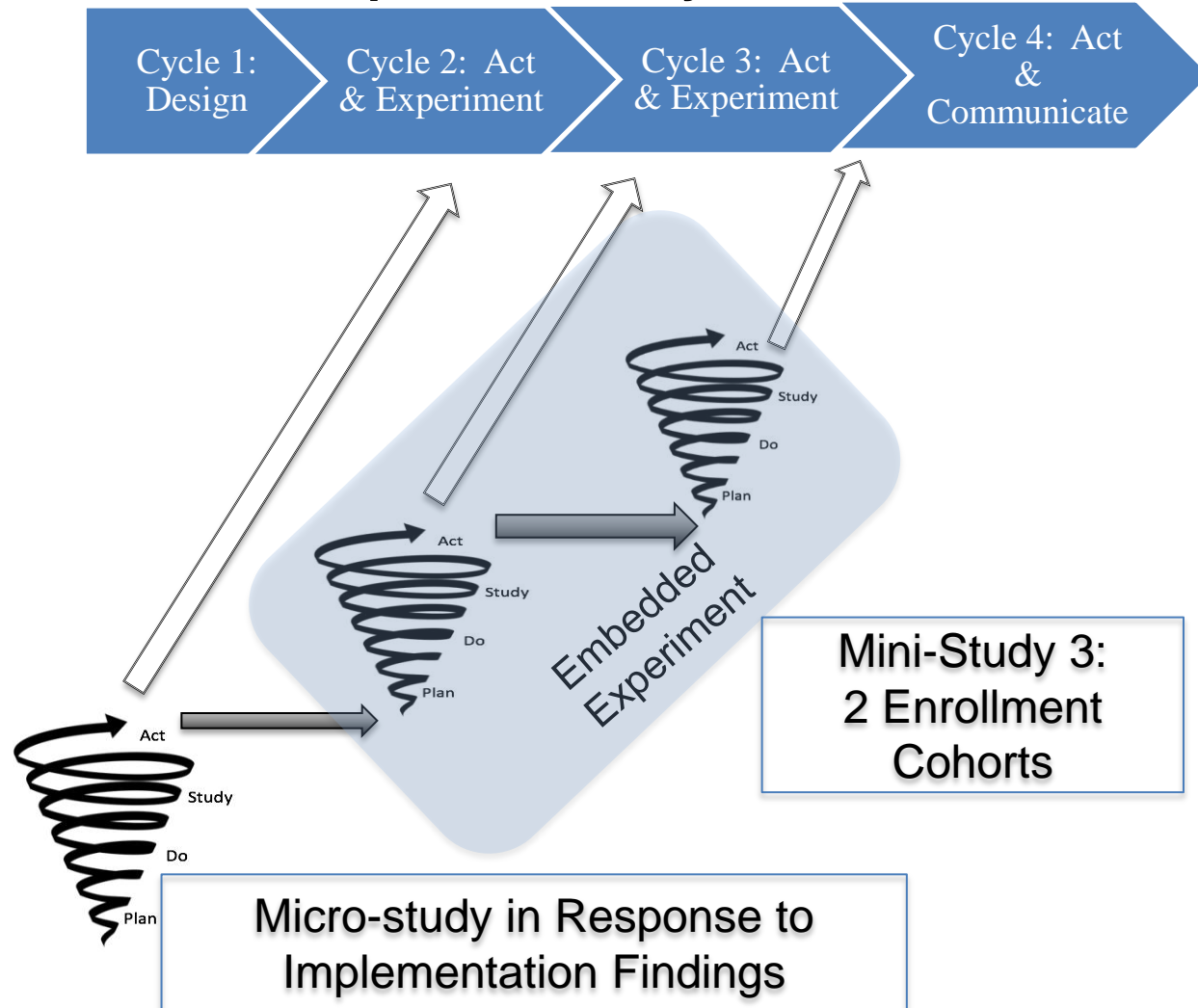
*NSC refers to National Student Clearinghouse

Study 4: 2 Cycles of Improvement Testing

Single & Repetitive Cycle Improvement Studies



Multi-cycle with Experimental Testing & Varied Improvement Cycles



Embedded Experimental Evaluation

Cycle 1: Plan (Identify Sites & Strategies)	Cycle 2: Roll Out Strategies in Testable Ways		Cycle 3: Evaluate & Communicate
(July – Dec. 2016)	(Jan. – June 2017)	(July – Dec. 2017)	(Jan. – June 2018)
<ul style="list-style-type: none"> <input type="checkbox"/> Brainstorm strategies <input type="checkbox"/> Plan roll-out <input type="checkbox"/> Train staff in design & strategies <input type="checkbox"/> Prepare for intake & random assignment 	<ul style="list-style-type: none"> <input type="checkbox"/> Enroll cohort 1 <input type="checkbox"/> Randomly assign to treatment <input type="checkbox"/> Deliver program Conduct regular check-ins <input type="checkbox"/> Review & refine Alternative Strategies 	<ul style="list-style-type: none"> <input type="checkbox"/> Enroll cohort 2 <input type="checkbox"/> Randomly assign to treatment <input type="checkbox"/> Deliver program <input type="checkbox"/> Conduct regular check-ins 	<ul style="list-style-type: none"> <input type="checkbox"/> Estimate impacts <input type="checkbox"/> Document strategies used <input type="checkbox"/> Interview site staff & students <input type="checkbox"/> Collect artifacts for alternative strategies <input type="checkbox"/> Share findings

Sample Enrollment & Assignment

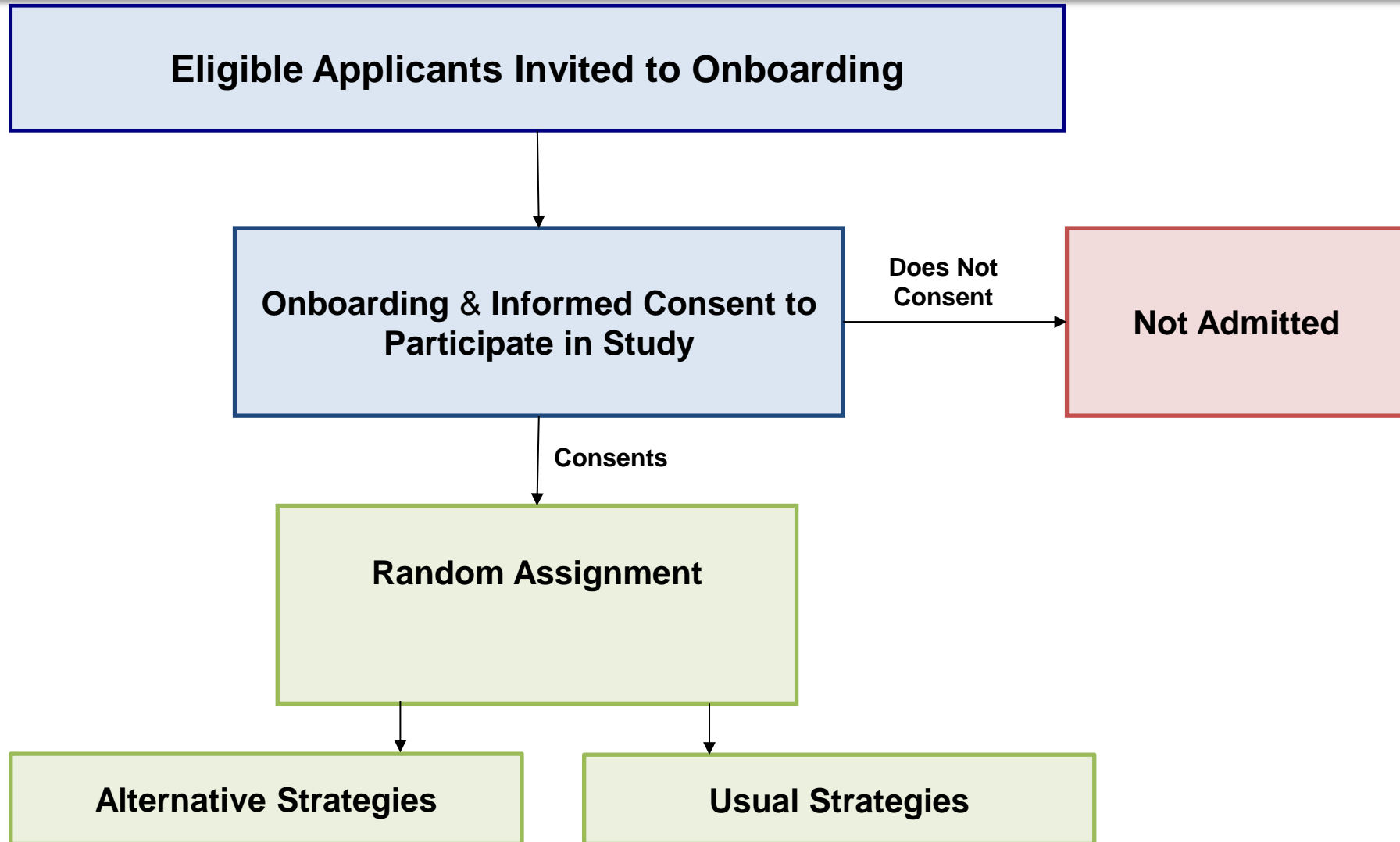
Setting & Sample

- 3 sites
 - New York, NY
 - Philadelphia, PA
 - Jacksonville, FL
- 317 participants in 2 cohorts
- ~ 100 participants per cohort & site

Random Assignment

- Blocked by site
- Assign to Strategy
 - Usual strategies
 - Alternative strategies

Randomization of Participants



Sample Page: Student Experience Map

Usual Strategies	Both Groups	Alternative Strategies
	Orientation with Instructors	
	All instructors meet with YU Program Staff for Orientation	
	Orientation with Coaches	
	All coaches receive baseline level training and intro to Schoology during onboarding	Coaches receive academic-focused coaching orientation & more info about coachee's academic background
	Orientation with Students	
Students go through orientation as usual & are introduced to the L&D portfolio project as previously	All students receive standard YU orientation	Students receive an academically-focused orientation & intro to expanded portfolio; asked about textbook access

Data Sources

Program Management Data

- On-line Application Forms
- Readiness Assessment
- Student Participation & Performance Data
- Modified Pre-Internship Survey Data (Extended)
- Year Up Theory of Change

Study-Specific Data Sources

- Site Experience Maps
- Bi-weekly Monitoring Calls
- Coaching Session Observations
- Coach Survey (Cycle 2 Only)
- Student & Staff Interviews

Lessons from Cycle 2 & Modifications for Cycle 3

Lessons from Cycle 1 testing

1. Affirmed initial “hunches”
2. Program improvement takes time & iterations
3. Site staff need structured & prescriptive action plans
4. Quality can trump quantity
5. Quality of academic supports was critical

Modifications for Cycle 2 testing

1. Coaching binder to supplement academically-focused coaching
2. Focus on academic issues in learning community meetings
3. Improve tracking of & response to academic issues through staff sharing of information
4. Increase coach access to information on student academic history and grades
5. Heighten awareness of available academic support resources & coach around engagement

Sample Reporting of Findings in Brief

Across all three sites and the two cycles of testing, we estimated that, as compared with outcomes for their counterparts in the Usual Strategies group:



Students in the Alternative Strategies group had a **9.5 percentage point higher probability of completing L&D**



Students in the Alternative Strategies group ended L&D with an average of **29 more contract points** (196 v. 167 points)



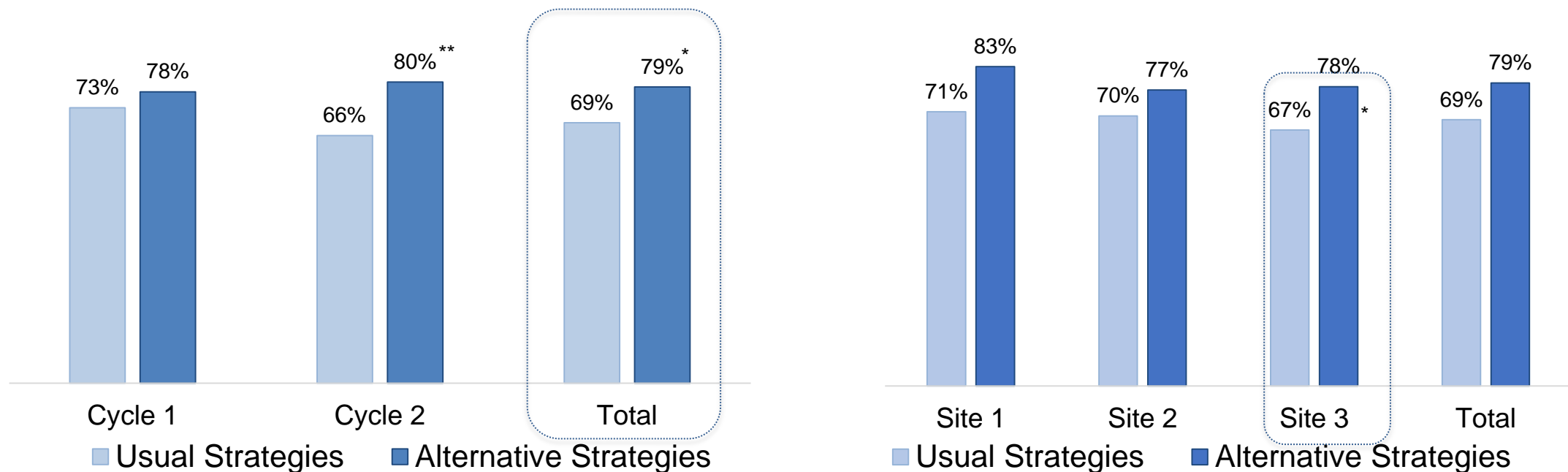
Students in the Alternative Strategies group spent an average of **10 percent more time enrolled in college** during L&D (5.6 v. 5.1 months)



Students in the Alternative Strategies group had a **13 percentage points higher likelihood of being enrolled in college** in the month following L&D (67% v. 54%)

Illustrative Reporting: Successful Completion of Learning & Development

Simple summary: In all 3 sites, students in the Alternative Strategies group had higher rates of L&D completion than their counterparts in the Usual Strategies group. However, only the average gain of 9.5 percentage points for the pooled sample was statistically significant.

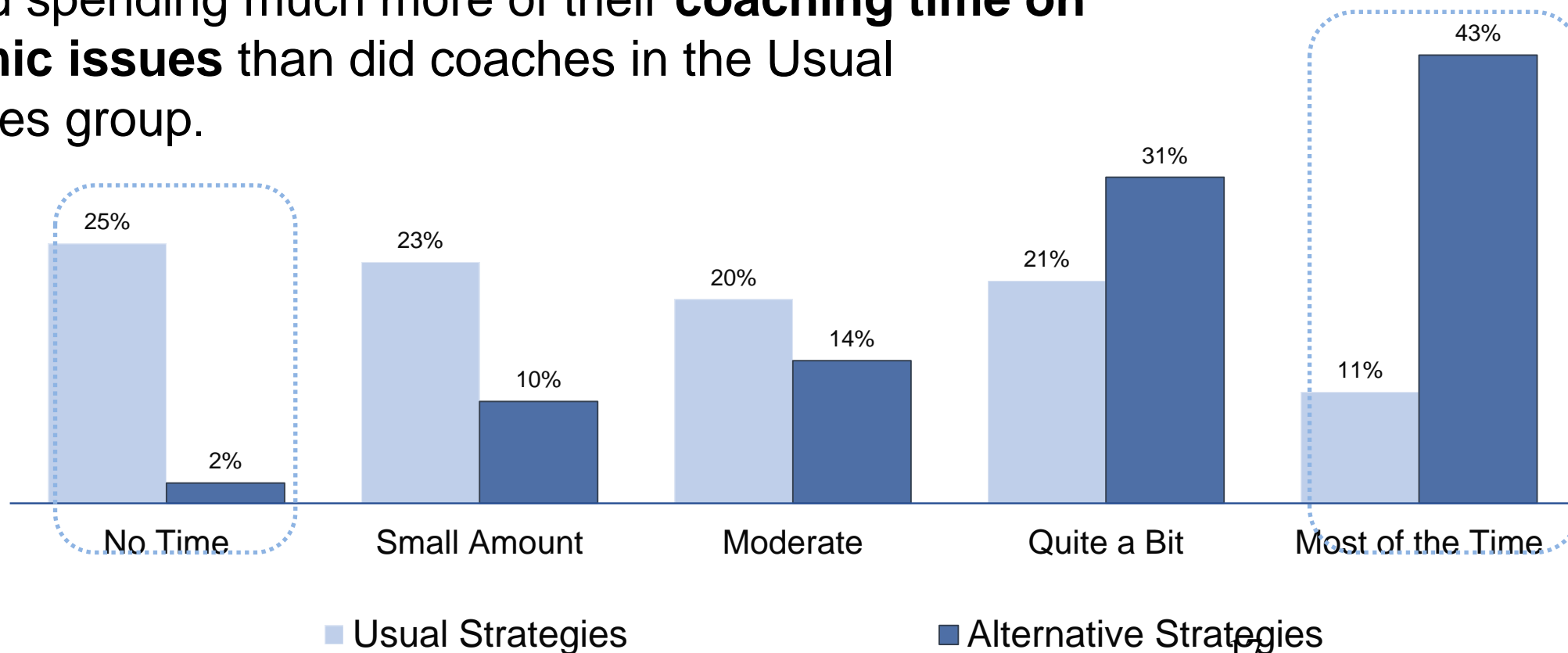


Notes: Estimates are regression adjusted and include sample design weights. Statistical significance levels of differences between the Usual and Alternative Strategies groups are denoted as follows: * < 10%, ** < 5% and *** = 1% level on two-tailed tests. Estimated impacts do not differ significantly between cohorts or across sites (p-values = .30 and .20, respectively).

Illustrative Explanation of Why Impacts Occurred

Plausible explanation: Coaches in the alternative strategies group spent more time on academic issues.

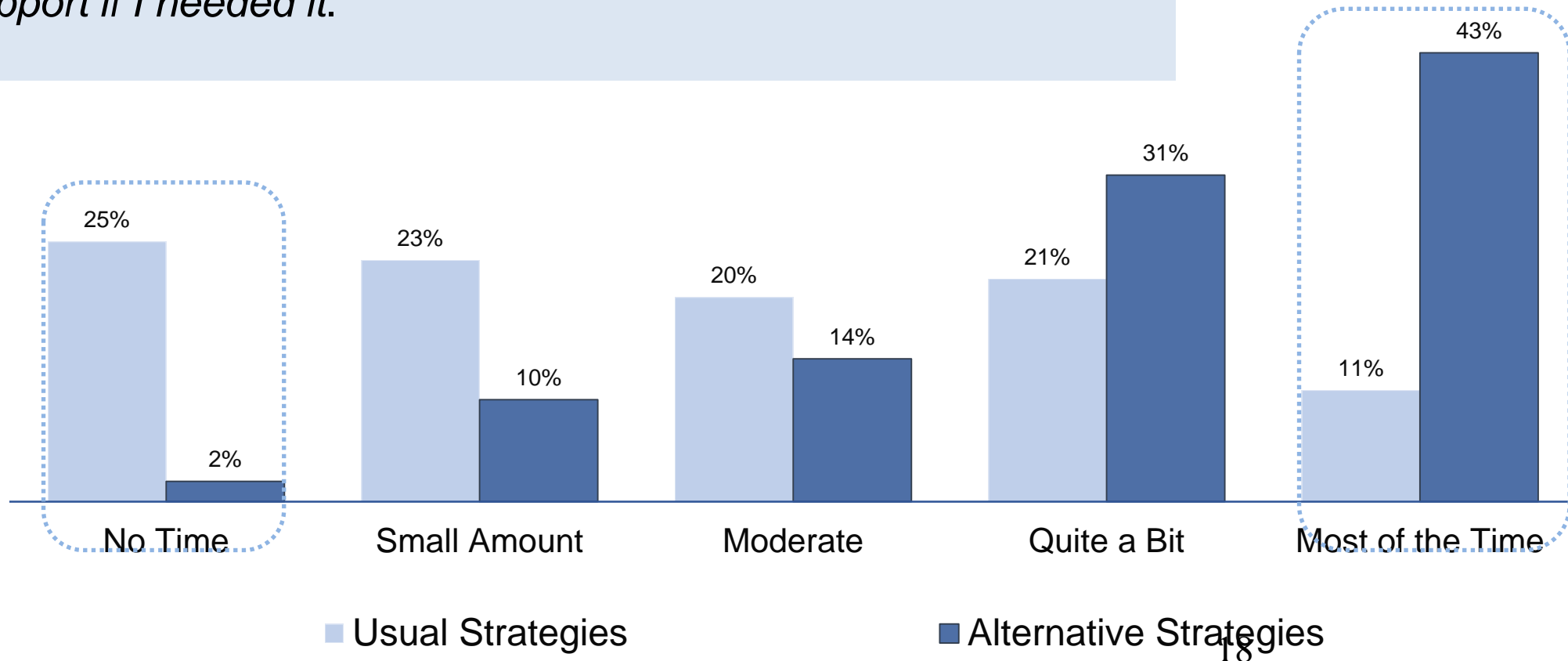
Evidence: Coaches in the Alternative Strategies group reported spending much more of their **coaching time on academic issues** than did coaches in the Usual Strategies group.



Why Impacts Occurred: In the Words of a Student

Alternative Strategies Group:

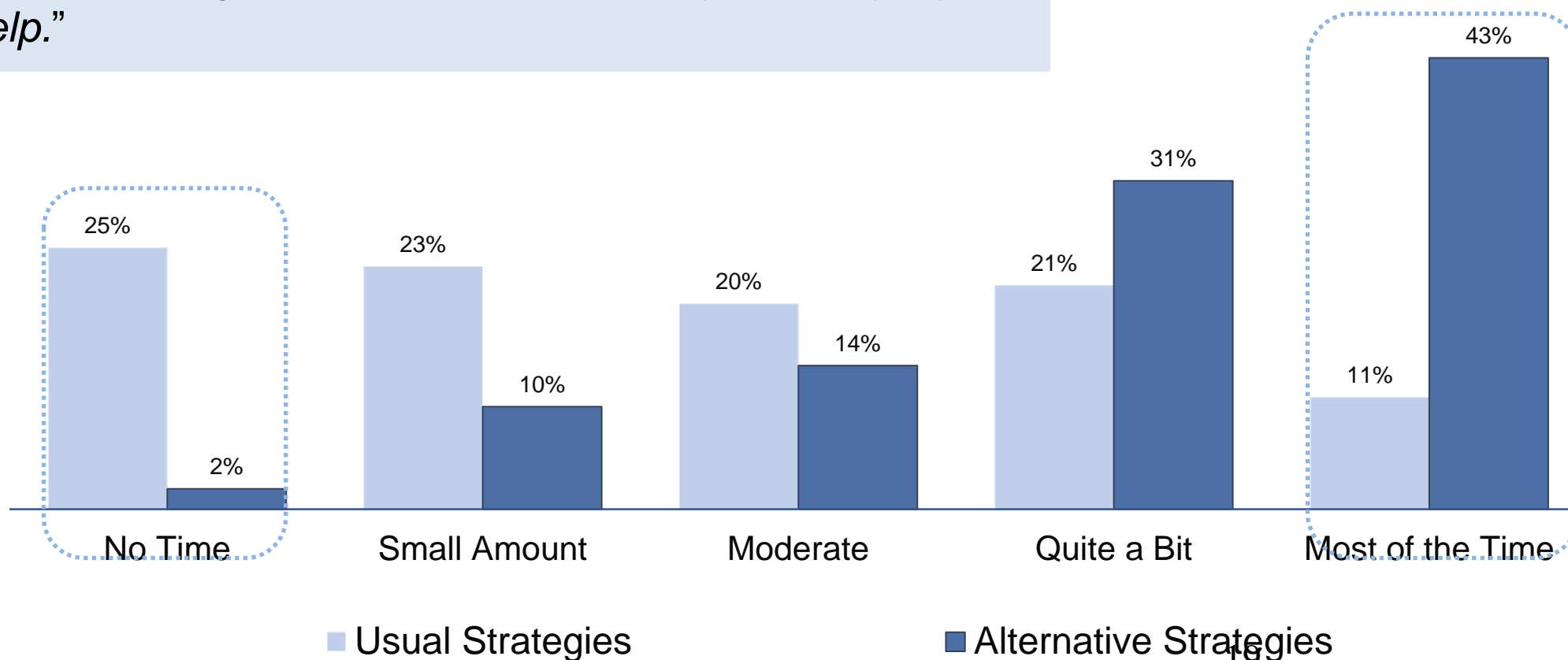
*“With me, she [coach] would get with my professors or I would tell her **myself**. And sometimes I would pull up my grades to her, you know. I’m doing good, and I’m struggling here and there. And she would give me the support if I needed it.”*



Why Impacts Occurred: In the Words of Another Student

Usual Strategies Group:

“As far as my (college) classes, [coach] would ask me about them but it was up to me to disclose, so I guess if somebody said they were doing fine, and they weren't, the coach wouldn't find out until it was time to send in grades...it's more of up to you to say if you needed help.”



Conclusion: The Power of the “Twist” (1)

Intervention Development: Shared goals & parameters tailored to local conditions & preferences

- Aligned w/ local culture & capacity
- Fostered buy-in & sense of staff agency
- Felt doable

Implementation & Testing: Typical level of oversight & intervention by management

- Low stakes monitoring
- Low-burden due to reliance on artifacts
- Refinement encouraged at normal intervals
- RCT provided convincing evidence

Conclusions: Power of the “Twist” (2)

Measures of Success:

- Reliance on authentic performance markers
- Low-cost, accessible, complete

Reporting & Action:

- Quick turnaround of findings
- Familiar format for reporting (PPT)
- Sharing of assembled tools & exhibits
- No operational recommendations from the researchers

Keys to Securing Buy-in

- ❑ Focus on priority issues for the program
- ❑ Low burden (even random assignment)
- ❑ Active engagement of program staff
 - Selecting focal issues
 - Deriving solutions for testing
- ❑ Empowerment of program staff
 - Adjust strategies
 - Allow evaluators to learn what, why, & how
- ❑ Continued communication with program staff
 - Allowed rapid response & troubleshooting
 - Flexibility to explore, tweak, &/or abandon

Resources

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