



Academic Outcomes for Spring 2019 Undergraduate Students who Participated in STAR Program

STAR (Students Taking Academic Responsibility) is an academic success program for University College (UC) students on first-time probation or first-time reinstatement after a previous dismissal. The program provides one-on-one coaching in order to guide and support STAR students by helping set academic and personal goals, as well as informing about campus resources.

The purpose of this study is to evaluate the success of the STAR program by examining student outcomes, including spring-to-fall retention and improvement in IU GPA after program participation. In order to minimize confounding factors, a stratified matched-pair study was also done to better evaluate the program.

Highlights from the study are as follows:

- During Spring 2019, 104 students on first-time probation or first-time reinstatement after a dismissal who were invited to participate in STAR coaching (based on their academic performance in the Fall 2018 semester). 63 (60.6%) attended while 41 (39.4%) did not.
- Compared to the overall Spring 2019 baccalaureate-seeking population, STAR participants were more likely to be male, first generation, had higher unmet need and lower high school GPA and SAT scores (Table 1). They were also more likely to be a freshman.
- Compared to students who were invited to the program but did not participate, STAR participants were more likely to be Latinx, first generation, had lower unmet financial need, slightly lower SAT scores and much lower IU GPA prior to Spring 2019 semester (Table 1).
- Only about half of the STAR participants were retained in Fall 2019.
- STAR participants were more successful than students who were invited to the program but did not participate, as participants had 12 percentage points higher spring-to-fall retention rate (46.0% vs 34.1%).
- STAR participants also showed an improvement of 0.17 in IU GPA compared to previous term, while students who were invited to the program but did not participate showed a decrease of 0.10 in IU GPA.
- When compared to other UC students with similar characteristics who did not participate in STAR, Spring 2019 STAR participants showed slightly higher spring-to-fall retention and end of Spring 2019 GPA, although the differences were not statistically significant.



This study included 104 students on first-time probation or first-time reinstatement after a dismissal who were invited to participate in STAR coaching during the Spring 2019 (based on their academic performance in the Fall 2018 semester). As shown in Table 1, STAR students had different characteristics than the overall Spring 2019 student population. They were more likely to be male, first generation, had higher unmet need and lower high school GPA and SAT scores.

Table 1. Demographic Characteristics of Spring 2019 Baccalaureate-Seeking Undergraduate STAR Participants and Non-Participants.

	N	No. Students (%)										Means				
		Female		African American		Latinx		Two or more races		Full Time		First Generation	Unmet Financial Need	High School GPA	SAT Score	
Attended STAR	63 (60.6%)	28	(44.4%)	6	(9.5%)	9	(14.3%)	2	(3.2%)	57	(90.5%)	23	(36.5%)	\$4,575	3.15	1053
Did not Attend STAR	41 (39.4%)	19	(46.3%)	3	(7.3%)	3	(7.3%)	5	(12.2%)	38	(92.7%)	4	(9.8%)	\$5,605	3.14	1068
Total Invited to STAR	104	47	(45.2%)	9	(8.7%)	12	(11.5%)	7	(6.7%)	95	(91.3%)	27	(26.0%)	\$4,960	3.15	1059
Spring 2019 Students*	17,004	9,622	(56.6%)	1,625	(9.6%)	1,416	(8.3%)	842	(5.0%)	14,396	(84.7%)	4,872	(28.7%)	\$4,401	3.42	1124

*Includes baccalaureate-seeking undergraduate students.

Table 2 and 3 showed academic outcomes of STAR Participants and Non-Participants. STAR participants were more successful than students who were invited to the program but did not participate, as participants had 12 percentage points higher spring-to-fall retention rate (46.0% vs 34.1%). STAR participants also showed an improvement of 0.17 in IU GPA compared to previous term, while students who were invited to the program but did not participate showed a decrease of 0.10 in IU GPA.

Table 2. Retention Rate of Spring 2019 Baccalaureate-Seeking Undergraduate STAR Participants and Non-Participants.

	N	Retained Spring-to-Fall At IUPUI	Retained Spring-to-Fall at any IU Campus
Attended STAR	63	29 (46.0%)	29 (46.0%)
Did not Attend STAR	41	14 (34.1%)	15 (36.6%)



	N	Retained Spring-to-Fall At IUPUI	Retained Spring-to-Fall at any IU Campus
Total Invited to STAR	104	43 (41.3%)	44 (42.3%)
Spring 2019 Students*	17,004	14,923 (87.8%)	15,129 (89.0%)

*Includes baccalaureate-seeking undergraduate students.

Table 3. Academic Outcomes of Spring 2019 Baccalaureate-Seeking Undergraduate STAR Participants and Non-Participants.

	N	Cumulative GPA beginning of Spring 2019	Cumulative GPA end of Spring 2019	Improvement in Cumulative GPA from Previous Term
Attended STAR	63	1.59	1.75	0.17
Did not Attend STAR	41	1.65	1.55	-0.10
Total Invited to STAR	104	1.61	1.67	0.06

Matched-Pair Study

Our findings showed that STAR participants had different characteristics than non-participants. Such differences could be sources of confounding when evaluating the success of the STAR coaching program. Propensity score matching is a commonly used algorithm in matched-pair studies that could be done to control for these differences (Rosenbaum and Rubin, 1983). However, this methodology could not be used in our study due to small sample size.

We were able to create a matched comparison group using a simpler, alternative method by drawing a stratified random sample, without replacement, from a control pool based on characteristics very similar to that of STAR participants (Feng and Doucette, 2010). The control pool that we used to draw from included baccalaureate-seeking students who were also enrolled in UC in Spring 2019, while excluding those who participated in Bepko Learning Center Coaching or 21st Century Scholars (n=2,640). T-test results showed that STAR participants held very similar demographic characteristics and financial background to that of the control pool; however, they differed significantly in terms of IU GPA prior to attending STAR, high school GPA and class standing, confounding factors we hope to minimize using the matched-pair study. For 63 STAR participants, the algorithm found 63 like-peers to designate as controls.



Matched-Pair Outcomes

When compared to other UC students with similar characteristics who did not participate in STAR, Spring 2019 STAR participants showed slightly higher spring-to-fall retention and end of Spring 2019 GPA, although the differences were not statistically significant (Table 4). Therefore we cannot imply that participating in STAR caused students to be retained at a higher rate.

Table 4. Academic Outcomes of Matched-Pairs.

	N	Retained Spring-to-Fall At IUPUI		Retained Spring-to-Fall at any IU Campus		Improvement in Cumulative GPA from Previous Term	Cumulative GPA end of Spring 2019
Attended STAR	63	29	46.0%*	29	46.0%*	0.17	1.75
Did not Attend STAR**	63	26	41.3%*	34	42.9%*	0.09	1.69

**Differences were not statistically significant.*

***Stratified random sample drawn from baccalaureate-seeking students enrolled in UC in Spring 2020 with similar characteristics to that of STAR participants. Excludes Bepko Learning Center students or 21st Century Scholars.*

Conclusion

Many UC students face challenges due to being first generation and less academically prepared, such as having lower high school GPA and SAT score than the overall student population. Of these students, the STAR students are particularly at-risk because they have been on academic probation and could benefit from one-on-one coaching.

When compared to other UC students with similar characteristics who did not participate in STAR, Spring 2019 STAR participants showed slightly higher spring-to-fall retention and end of Spring 2019 GPA, although the differences were not statistically significant. Therefore we cannot imply that participating in STAR caused students to be retained at a higher rate. Nonetheless, STAR participants were more successful than students who were invited to the program but did not participate, as participants had 12 percentage points higher spring-to-fall retention rate and an improvement of 0.17 in IU GPA. Perhaps this could make a compelling argument to mandate STAR students



to attend the program. Number of times a student attended the program may also be important to examine in the near future. In addition, high-level matching algorithms cannot be ran due to small sample size. Hopefully as more semesters go by, we will be able to collect more data going forward for a future study.



References

Rosenbaum, P. R., and Rubin, D. B. (1983). The Central Role of the Propensity Score in Observational Studies for Causal Effects. *Biometrika* 70:41–55.

Feng, Y. and Doucette, P. (2010). Select Matched-Pair Control Sampling using PROC SURVEYSELECT. SAS Global Forum, 2010, NC: SAS Institute Inc., paper 213-2010.