Clifton Public School Students Using Imagine Robotify® Show Growth on NJSLA

Overview

Clifton Public Schools (Clifton) is a suburban school district in New Jersey that serves approximately 11,000 students in Grades PK through 12. During the 2023–2024 academic year, Clifton Public Schools in New Jersey implemented Imagine Robotify to support students in meeting coding standards for Grades 2–8 students. Over the course of the year, 3,094 students used the program and completed an average of 29.1 tasks (these students also used Imagine Math during the 2023–2024 school year). Imagine Learning partnered with Clifton to examine how usage of Imagine Robotify impacted students' mathematics achievement. Imagine Learning analyzed the New Jersey Student Learning Assessments (NJSLA) mathematics data to determine how students' usage of Imagine Robotify was associated with NJSLA mathematics performance.

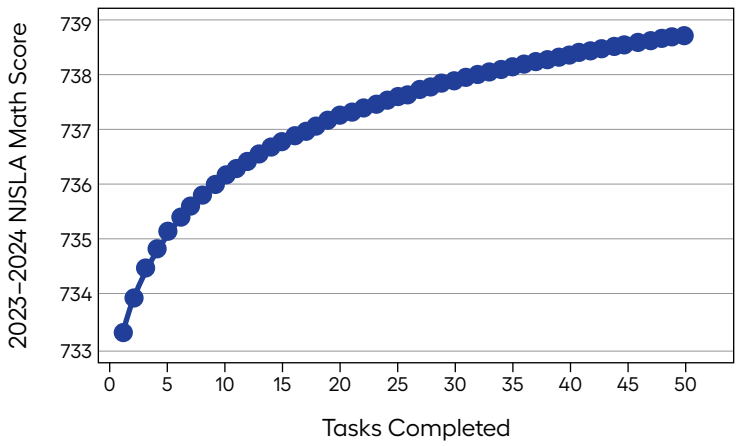
Clifton Public Schools, NJ

Demographics	n = 3,094
Special Education	20%
ELL	13%
Title I Math	33%
504 Plan	2%
Female	48%
American Indian/Alaskan Native	<1%
Asian	7%
Black	4%
Hispanic	48%
2+ Races	8%
Native Hawaiian/Pacific Islander	<1%
Unknown Race	5%
White	27%

Results

Data from this research study demonstrate positive associations between the use of Imagine Robotify and NJSLA math performance. Particularly, as students completed more tasks in Imagine Robotify, they achieved statistically greater scores on their 2024 NJSLA math assessment (p < .01, see Figure 1). Further, after statistically matching students on baseline scores and demographic variables, results showed that students who completed more than the median number of tasks in Imagine Robotify statistically outperformed their peers by about 2 points on the NJSLA math assessment (p = .016, see Figure 2).

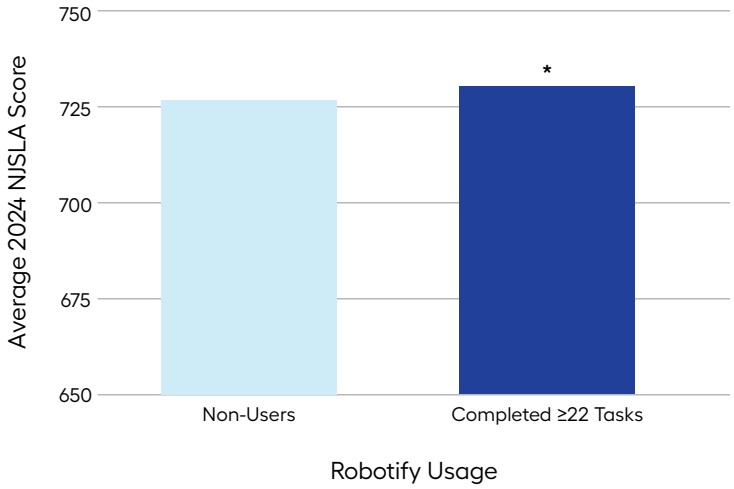
Figure 1. Association between number of tasks completed in Imagine Robotify and 2024 NJSLA Math score.



Conclusion

Research shows a strong link between computer science instruction and math achievement, with increased time spent on computer science positively affecting students' math performance (Century et al., 2020; Salac et al., 2021). These findings suggest that Imagine Robotify supports students' math achievement.

Figure 2. Average 2024 NJSLA math score by Imagine Robotify usage



Note: **p<.05*

References

Century, J., Ferris, K. A., & Zuo, H. (2020). Finding time for computer science in the elementary school day: A quasi-experimental study of a transdisciplinary problem-based learning approach. *International Journal of STEM Education, 7*(20). https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-020-00218-3

Salac, J., Thomas, C., Butler, C., & Franklin, D. (2021). Understanding the link between computer science instruction and reading & math performance. In *26th ACM Conference on Innovation and Technology in Computer Science Education V. 1. (ITiCSE 2021)*, June 26-July 1, 2021, Virtual Event, Germany. ACM, https://dl.acm.org/doi/pdf/10.1145/3430665.3456313