

CASE STUDY

KNOWLEDGE IS POWER PROGRAM



KIPP Schools



Overview

- Knowledge is Power Program (KIPP) is the largest network of public charter schools in the U.S.
- KIPP serves predominantly Black and Latino students across the country, as well as other students of color.
- The traditional approach to robotics teams (i.e., 10 students per team per school) would mean leaving out thousands of other bright youngsters who wanted to try their hand at coding and building robots.
- For help, KIPP turned to the CoderZ platform, which not only helps expose its diverse student body to STEM opportunities, but also supports its teachers on their own coding journeys.



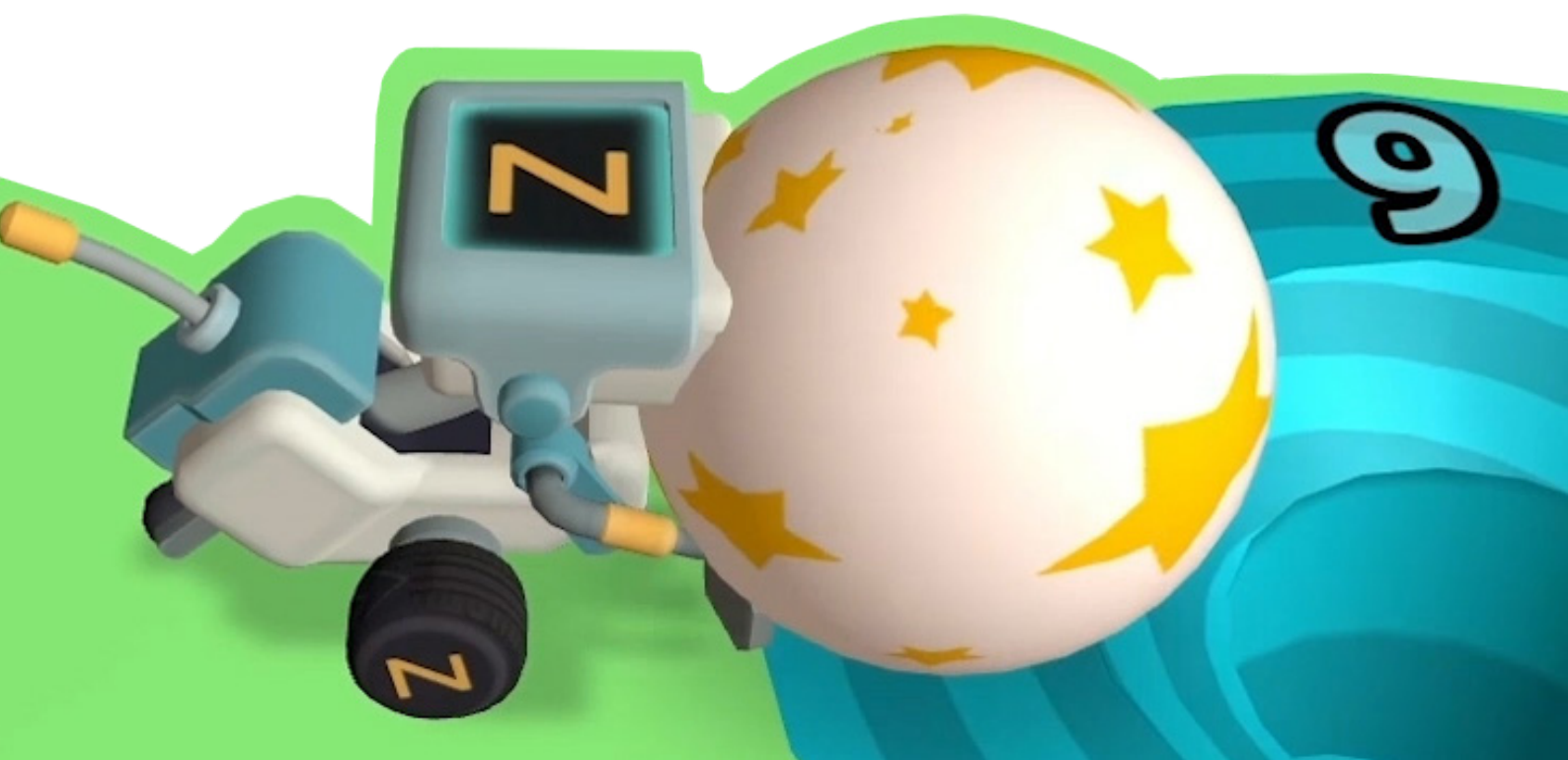
Laying a Solid Foundation for Tomorrow's Computer Coders

A network of free open-enrollment college preparatory schools located in low-income communities nationwide, the Knowledge is Power Program (KIPP) is the largest network of public charter schools in the U.S. Serving over 100,000 students, KIPP has a presence in most urban centers and in some rural areas for a total of 32 regions (each of which encompasses between two and 30 schools).

"We serve predominantly Black and Latino students across the country, as well as other students of color," said Paola Valdivia, Director of STE Instruction.

Knowing that these students don't always get an equal shot at some of the most desirable and high-paying technical careers, KIPP works hard to level that playing field and put STEM careers within their reach.

"We've found that our students, given the opportunity and the exposure to computer science and robotics, flourish and thrive," said Valdivia, who four years ago led an initiative to start robotics teams at many of KIPP's schools. "We wanted to give all of our students an opportunity to learn and get exposed to coding and robotics."



Supporting a Scaffolded Approach

For KIPP, the traditional approach to robotics teams (i.e., 10 students per team per school) would mean leaving out thousands of other bright youngsters who wanted to try their hand at coding and building robots. “We knew we needed to do something broader,” Valdivia recalled, “so we integrated one unit of computer science into every grade level and scaffolded the program by age.”

After testing out a few different coding curriculums, Valdivia learned about the CoderZ robotics platform. “CoderZ caught my attention because we had adopted FIRST Robotics at the middle schools and worked with the EV3 robots,” she explained.

“A lot of eighth graders were joining our robotics teams,” Valdivia continued, “and the platform seemed like a perfect mesh of giving every single student the opportunity to learn how to code and see their own virtual robot move.”

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The Widest Possible Reach

When selecting a robotics platform that would provide the widest possible reach across KIPP’s student body, Valdivia was particularly impressed with how CoderZ supports teachers. In fact, the support has helped spawn more dedicated robotics and computer science teachers in the KIPP ecosystem.

“In schools that lack a dedicated teacher, taking on teaching computer science in any form or fashion can be very daunting,” Valdivia explained. “Teachers who feel like they don’t have the expertise sort of shy away from it.”

CoderZ provides a support structure that helps all of KIPP’s science teachers lay out the framework for computer science conceptual learning before students apply that knowledge in the robotics platform. It’s also a good blended learning solution that has a positive impact on students’ STEM performance and life skills (e.g., collaboration, grit, and perseverance).

“The program came complete with lesson plans, PowerPoints, and a support team that was very flexible and open to feedback. Those were very attractive selling points for us,” said Valdivia. “We knew CoderZ was the right choice for our schools.”

By taking advantage of a CoderZ-Amazon partnership focused on providing teacher licenses, KIPP is now engaging teachers in regions where computer science may not be flourishing or where it’s just not a priority right now. “Those teachers are now using the platform, learning more about it,” Valdivia explained, “and—ideally—advocating for its adoption within their own schools and/or regions.”



Promoting Equity Through Coding

For KIPP, making computer science as much of a priority as its core science curriculum was an important step in getting a more diverse group of students involved with coding. From an equity perspective, Valdivia said CoderZ expands upon that vision by exposing students to new STEM opportunities that they may not have otherwise considered.

"CoderZ also opens up the opportunity for students who may not have thought of themselves as the 'coder type,'" she added, "and offers them the opportunity to learn how to do it and get better at it and become a coder team leader."

For all KIPP students, CoderZ provides the opportunity to learn how to code a robot and then see what that code looks like in a virtual EV3 robot. For the schools themselves, it serves as a supplemental opportunity that doesn't incur the cost of buying physical robots and a way to monitor student performance and progress.

"In fields like computer science and robotics, assessing mastery isn't easy. There's no paper test to take," Valdivia said. "Through its data platform, CoderZ allows students and coaches to see mastery of coding both at a basic and advanced level."

About KIPP Schools

DEMOGRAPHICS

95%

African American
& Latinx

88%

are eligible for federal free or
reduced price lunch (FRPL)*

12%

receive special
education services

17%

are designated as English
Language LEARNERS (ELL)

OVER
112,000
STUDENTS

28
REGIONS

