Partner Background

The mission of RePublic Schools is to reimagine public education in the South. RePublic operates schools in Tennessee and Mississippi that value innovation and ownership and leverages the success of those schools to change the educational trajectory of all students in the south. RePublic lives out the second part of the mission through spreading its computer science program by partnering with schools across the South, two of which are in Louisiana for the 2016-2017 school year.

To navigate our world in the midst of a digital revolution and one brimming with opportunity to redesign how we live, students need an education that requires more than the ability to navigate a multiple choice exam. They need an educational experience that stimulates their imagination, the knowledge to breathe life into their vision, and the tangible skills to build that vision into reality. Computer science rooted in computational thinking transforms students from consumers of technology to creators of opportunities and ideas.

Access to high-quality computer science education is an issue of civil rights. There are currently 500,000 high-paying tech jobs across the US that are unfilled and the number is expected to increase to 1,000,000 by 2020[1]. With a starting salary of $70,000, these jobs represent opportunities that students are not able to partake in without a firm foundation in computer science and coding. If one looks at recent data points, either AP Computer Science participation or the current make up of the computer science talent pool, one sees an exclusive community, primarily made up of white and Asian-American men. In 2015, less than 20% of AP Computer Science test takers nationally were women. Participation rates[2], when broken down by race, were even more bleak: 0 students of underrepresented minorities participated in Mississippi, 37 in Tennessee, and 40 in Louisiana.

RePublic is dedicated to changing this narrative within our schools and across the South. To make sure our students have the skills to actively participate and contribute to this rapidly-evolving field, RePublic committed to teaching computer science as a core subject within our schools. With a team of educators fluent in classroom best practices and input from an Advisory Panel made up of industry business leaders, we incubated a strong curriculum and teacher-training program that now reaches 5,000 students across 29 schools.

To ensure that all students - regardless of where they live - have access to schools that prepare them for college and career, it is critical to provide students with access to high-quality computer science education.

Through its non-expert dependent teacher training model and AP-aligned project-based curriculum, RePublic Computer Science is ready to join in Louisiana's efforts to transform low-performing schools by collaboratively working with district and school leaders to build a pathway to AP CS Principles. This work would provide students with an avenue to learn the foundational CS knowledge needed to later participate in AP Computer Science offerings; empower them with tangible, hirable skills; and increase participation rates of underrepresented students in computer science. Joanna Klekowicz, our Director of Computer Science Expansion, works with district and school leaders across the south to implement CS.

Evidence of Track Record of Student and School Outcomes

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[1] https://www.whitehouse.gov/blog/2016/01/30/computer-science-all; https://www.code.org/promote

[2] https://research.collegeboard.org/programs/ap/data/archived/ap-2015

RePublic currently operates three middle schools and one high school in Tennessee: Nashville Prep, Liberty Collegiate Academy, Nashville Academy of Computer Science, and RePublic High School. In 2015, RePublic expanded to Mississippi where it now operates two middle schools: Smilow Prep and Reimagine Prep. Reimagine Prep is the state's first charter school. To date, Mississippi has only approved three charter schools, two of which are operated by RePublic.

RePublic Schools has built a foundation of excellence in Tennessee and Mississippi, with the results here representing only a small snapshot of the success seen across the network:

- Liberty Collegiate was one of only nine schools in the state to be named a Reward School for growth and absolute performance in 2015. To date, Liberty Collegiate and Nashville Prep are the only two charter schools in Tennessee history to ever earn this dual distinction.
- Reimagine Prep ranked in the top 6% of all schools in Mississippi in 2016 for growth in Math.
- In 2015, each of RePublic's schools in Nashville, on average, outperformed the district, the state, and district charter schools in every tested subject.
- Nashville Prep and Liberty were the #1 and #2 open enrollment public schools in Tennessee in 2014 for achievement in 7th grade Math. Their scholars also more than doubled the district and state averages.
- In 2013, Stanford University and the Tennessee Department of Education ranked Nashville Prep and Liberty as the top two charter schools in Tennessee based on student growth.

RePublic Computer Science continues to profoundly impact students across the south:

- For the 2015-2016 school year, RePublic was approached by a family foundation to extend its innovative CS work to Austin, Texas. After a successful pilot year with 6 schools in 1 city, RePublic CS tripled its Texas impact and now serves 18 schools across 5 cities. This exponential growth will continue.
- Overall, RePublic CS now reaches 5000 students across 29 schools in the south.
- RePublic CS partners with external schools in Louisiana: Baton Rouge, New Orleans; Tennessee: Memphis, Nashville; and Texas: Austin, Corpus Christi, Houston, San Antonio and Weslaco.
- In 2015, there were only 37 students of underrepresented minorities (URMs) who took the AP Computer Science exam in TN. This spring, there will be 130 students at RePublic High School who will take the AP CS Principles Exam, of which 90% identify as URMs and 50% identify as women. With our founding class, RePublic High School will represent a 325% increase in participation of URMs across the entire state of Tennessee.
- In April 2016, RePublic's CS program was praised by the White House.[3]

Your Organization's Model

Teacher Training

Our model is non-expert dependent. The RePublic CS Program assumes all new teachers begin with only basic computer literacy, including the ability to interact with a browser, type, save files, and download applications. RePublic CS provides educators with the training and resources to be successful computer science teachers through a three-pronged approach to professional development:

- *In-person training* - Teachers engage in intensive 2-day summer training and 1-day winter training where they dive into content, build out student projects, and practice delivering lessons.
- *Self-paced online content* - Teachers access curricular resources, daily lesson plans, videos, and training challenges to develop content expertise and lesson familiarity throughout the entire year.

[3] https://innovation.ed.gov/2016/04/13/celebrating-the-white-house-science-fair-at-the-u-s-department-of-education/

- *Interactive video training* - Teachers participate in virtual community development sessions that are led by the RePublic CS Curriculum Team.

Curriculum and Platform

Our curriculum has two entry points: middle school or high school. Each course is vertically aligned to the AP Computer Science Principles framework from day 1. As the RePublic CS program has been designed by educators, for educators, each course has been masterfully crafted to incorporate pedagogical best practices to ensure that each student is successful. Lessons are broken out topically into units, each of which has been designed to run for 25 days and each course contains 4 units. Each class block is designed to run for a minimum of 45 minutes and can easily be executed in either block or period format. Lessons contain extension challenges and each course contains winter and summer capstones which allow us to accommodate and differentiate for individual school schedules. Both entry points provide students with foundations in computer science, coding and computational thinking. Students begin with block coding and explore game, web, and app design. As students move through courses, they learn HTML, CSS, Javascript, independently or collaboratively build out two projects per unit, strengthen problem solving habits, and pitch their final projects in each unit. Additionally, RePublic offers a series of 1-3 day mini units covering a diverse range of topics, including 3D printing, robotics, drones, and unplugged programming.

Curriculum is accessed through the RePublic CS platform, which was designed specifically for these courses to best support students and teachers. Lessons are interactive and teachers are able to see data from checks for understanding or assessments in real-time. Teachers also access curricular resources and online content training through the platform.

Louisiana Partnership

To differentiate for the unique needs of schools and districts in rural areas and small, medium or large cities in Louisiana, Joanna would work closely with district and school leadership to develop CS pathways that lead to AP CS Principles. For example, for high schools, this may include the High School I foundations course, followed by AP CSP, followed by the entrepreneurial High School II course. Similar to her past and current work with all partner schools across the South, vision and implementation plans are collaboratively designed by taking into account district and school goals, middle to high school feeder patterns, and desired timelines. Next, summer and winter training sessions will be regionally offered to help us best support the needs of each region. For the 2016-2017 school year, we held in-person teacher training in LA, TX, and MS and we can continue to run regional training in LA.

To enhance success in Louisiana, support would be needed from state, district and school partners. It is important for school and district leadership to be supportive of computer science work so that schools are able to allocate the funds and time to ensure access to computers, internet, curriculum and teacher training. Furthermore, district and state support is needed as schools navigate teacher certification and course naming requirements as waivers may be needed to allow teachers to ramp up in a new content area. The most important attributes of an ideal partner or district are (1) a commitment to computer science and the impact it has on student lives, and (2) access to working technology and internet at schools.