

Four Schools, Four Challenges, One Goal: A case study approach to how Education2020 helped increase student achievement

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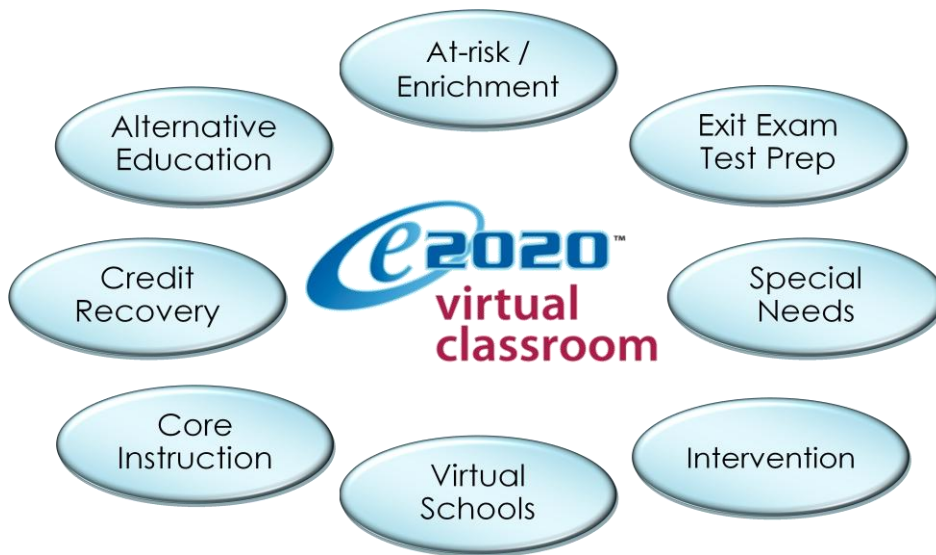
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# Introduction

e2020 has successfully deployed online classroom programs in various settings (Figure 1) to a wide range of student academic levels since 1998. Schools are utilizing e2020 for a variety of purposes including core curriculum for middle and high school education, credit recovery, academic learning centers, grade recovery programs, fast track middle school programs, district virtual schools, and various alternative school models. For the significant number of schools that have utilized e2020 as the core curriculum, those schools have solidly outperformed other traditional schools.

At the time of this study, e2020 was servicing over 40,000 students in 34 states. Participating students range in skill from special education to fast track students who, in some cases, have obtained perfect scores on the SAT and ACT tests. Education2020 students consistently show increased academic gains when the program is implemented with fidelity.



**Figure 1.** e2020's Targeted Solutions

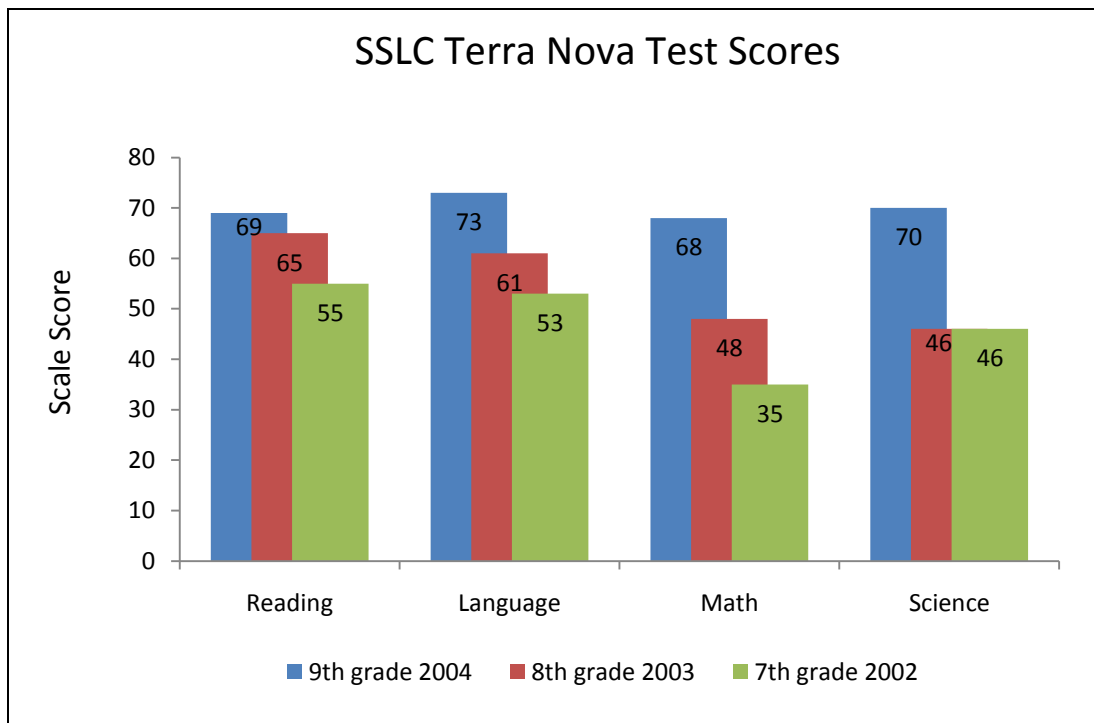
The following four case studies provide both quantitative student performance data and qualitative evidence of improved student academic performance since 2001. Each case study represents a unique implementation and shows the link between the Education2020 programs and increased student academic achievement.

## Case Study 1: Core Curriculum in New Mexico

**Educational Setting:** The following study demonstrates how students using the e2020 Virtual Classroom who were originally below national and state standardized test scores were able meet, and then eventually exceed normalized test scores.

This New Mexico school evaluated students' test scores after completion of core classes with e2020. Four master-certified teachers oversaw 300 students over a period of three years; students had both school and at-home access. Students were enrolled via a lottery system with a waiting list that was greater than 600 students.

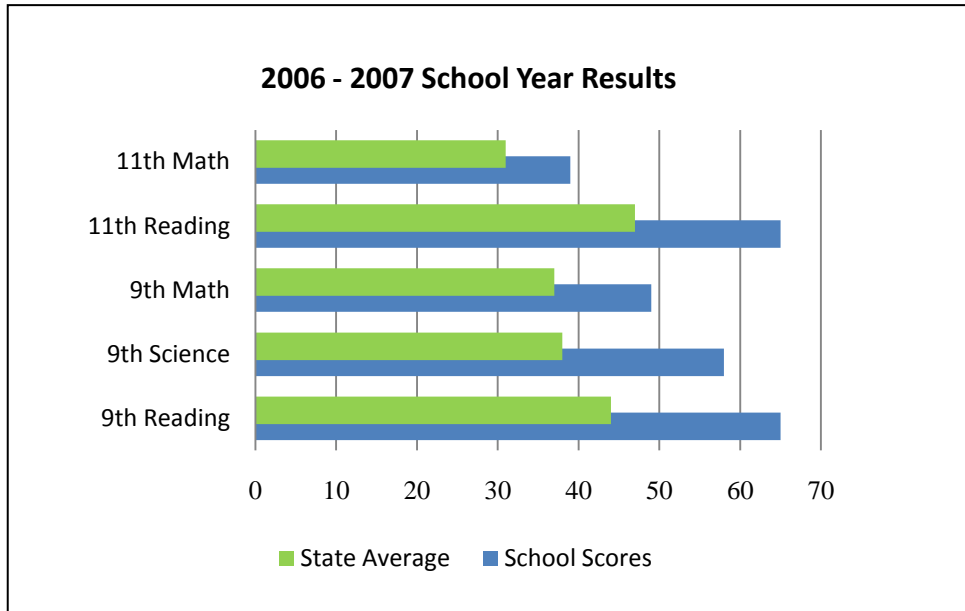
**Results:** Between 2002 and 2004, New Mexico mandated that standardized testing be based on the Terra Nova. The test scores shown in Figure 2 represents 7th grade students enrolled across three years within the core subject areas of Reading, Language Arts, Math, and Science. Scale scores range from 1% to 99% and are based on upon comparisons to the nation's body of students. If a student receives a score of 50%, they fall exactly on the average with other students from across the nation, but if they receive a score of 70%, they fall in among the top 30% of the nation's students.



**Figure 2.** SSLC Terra Nova Test Scores (Cohort 7-9<sup>th</sup> grade)

These scale scores demonstrate clear gains across all four subject areas for the students using the e2020 core curriculum. The average increase was 52% with the largest gains in math and science, while the smallest gains were in reading and language (14% and 20% respectively).

In the 2005 – 2006 school year, New Mexico changed from the Terra Nova to the New Mexico High School Standards Assessment (NMHSSA). In 2006-2007, New Mexico used the NMHSSA to test students in grades 7, 9, and 11 in reading, math, and science. Figure 3 shows scores for the e2020-implemented school compared to the state average. In all areas, this school excelled above and beyond state averages.



**Figure 3.** e2020 school scores compared to state average

Since 2002, the core curriculum has continued to be provided through the e2020 Virtual Classroom. Based on e2020’s core content, a correlation can be shown between students standardized testing results and the curriculum. Thus, these testing outcomes provide an excellent and consistent demonstration of the effectiveness of the e2020 Virtual Classroom as achieved by this New Mexico school.

**Notable achievements from the e2020-implemented school:**

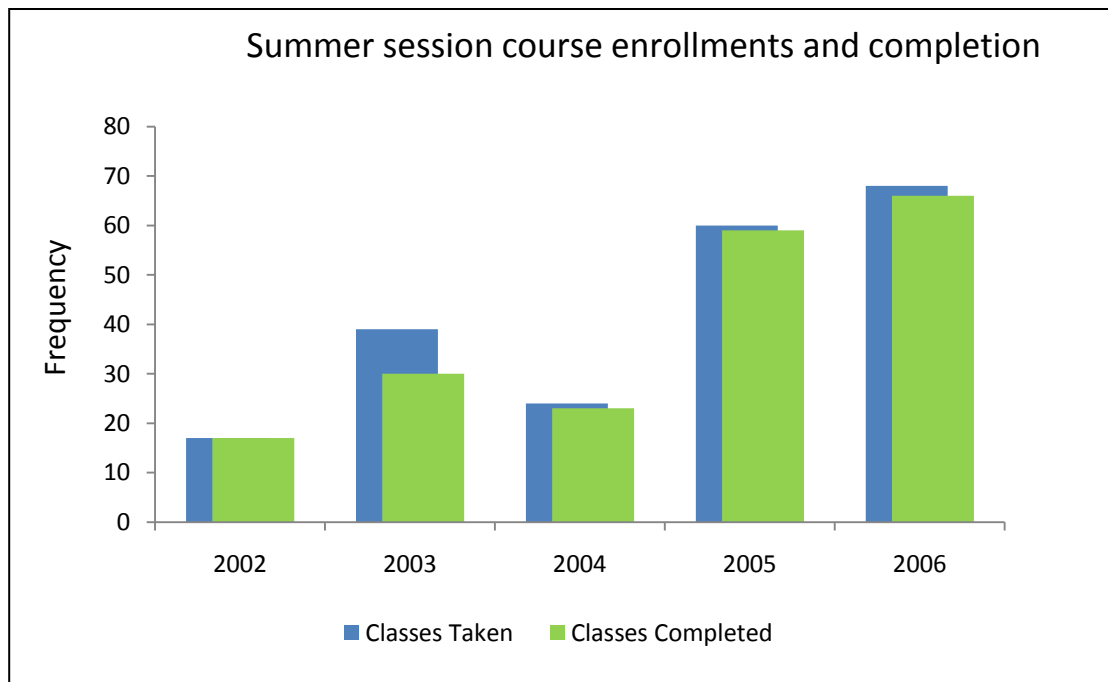
- Achieved highest test scores in Albuquerque on the New Mexico Achievement Assessment
- Accredited by the North Central Association Commission on Accreditation and School Improvement (NCA CASI) as “College Preparatory”
- Received 3rd place honors out of 53 competing entities (50 states and 3 territories) in the National Panasonic Academic Challenge in Orlando, FL during summer 2002
- Asked by the New Mexico Board of Education to develop an alternative education plan to assist state’s traditional schools identified as being “in need of improvement”
- Excelled on SAT and ACT college exams with several students earning a perfect score on the SAT and four students earning perfect scores on the ACT exam
- Chosen as the only school to present to the NCA CASI’s Executive Board on policy and accreditation

## Case Study 2: Intensive Intervention/Credit Recovery in Michigan

**Educational Setting:** This Michigan school district used e2020 to help at-risk students successfully recover one or more failed core course credits. Results indicate that students who attempt to take a course using the e2020 Virtual Classroom have an extremely high chance at successful completion.

A Michigan school district serves approximately 15,486 students in 16 elementary schools, 6 middle schools, 4 high schools, and 2 alternative programs. The e2020 program began in the summer of 2002 as a pilot. Because of its success, the district implemented e2020 in all 4 high schools. The district also adopted the collaborative process of professional learning communities in 2003 with one high school taking the lead implementation role for e2020 as an intensive intervention option.

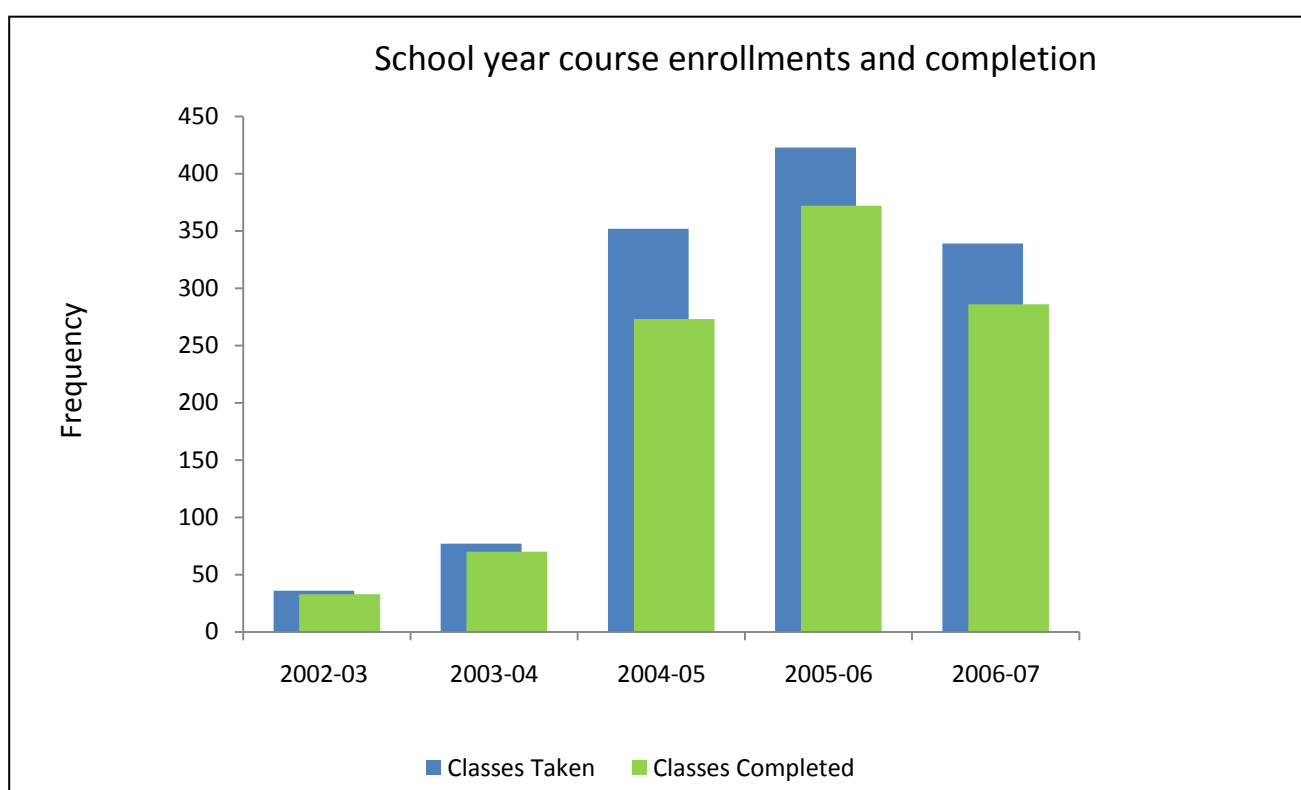
**Results:** Through the use of this collaborative process of professional learning communities, this high school developed a series of intervention strategies for at-risk students. Figure 4 demonstrates the frequency of these at-risk students enrolling in and completing classes using e2020 along within the Academic Learning Centers schedule between 2002 and 2006.



**Figure 4.** Courses attempted and completed (summer sessions 2002 – 06)

Simple observations of the histogram proportions above suggests the difference between classes taken and passed varies by only one or two students, but a Chi-Square analysis demonstrates that the proportion between classes taken and classes completed do not differ significantly across all five school years. Further, the percent of students completing and recovering course credits is increasing over time, meaning as the school district enrolls more students into the e2020 Virtual Classroom, these same students seem to be completing the class. This Michigan school achieved a success rate with over 93% of its students recovering one or more failed core class during all observed summer school sessions using the e2020 Virtual Classroom while still holding students accountable to the state’s high level of academic rigor.

From 2002 to 2007, e2020 serviced 1114 students in 1435 courses in this district. Figure 5 shows the number of classes taken and completed by e2020 Michigan students during the regular school year.



**Figure 5.** Courses attempted and completed (school years 2002-03 through 2006 -07)

A Chi-Square analysis was conducted between each proportion across all five school years. The results of this analysis indicate no significant differences between classes taken and classes completed for the 2002-2003, 2003-2004, and 2005-2006 school years; but the results indicate a significant difference between the proportions for the 2004-2005 [ $\chi^2 (1, N = 624) = 9.97, p < .05$ ] and 2006-2007 [ $\chi^2 (1, N = 624) = 4.49, p < .05$ ] school years. Despite these slight differences, the overall data demonstrates that 1229 courses were completed resulting in an 86% completion rate during the entire 2002 - 2007 time period. These results align with other e2020 implementations throughout the country: students who attempt to take a course using the e2020 Virtual Classroom have an extremely high chance at successful completion.

### Case Study 3: Credit Recovery in a Large Urban School District in West Texas

**Educational Setting:** One urban district in Texas was experiencing high failure rates (47% of high school students) in classrooms with traditional instruction. The following study demonstrates how approximately 2,218 students completed 4641 courses over a 3-semester period using the e2020 Virtual Classroom. A large proportion of these students have been classified as special needs (i.e. special education, English language learners, and at-risk) by the district and results indicate that they can complete courses with as much chance of success as other populations of students.

Located in west Texas, this district serves over 60,000 students in 91 campuses. In 2004, e2020 was used as a district-wide implementation for the summer school session at the high schools. e2020 provided a cost-effective means to supply classes to nearly 184 students taking approximately 223 classes to graduate. The following tables compare ethnic and demographic data for this west Texas school district to the state's average.

Ethnicity	District	State Average
Hispanic	81%	44%
White	13%	39%
African American	4%	14%
Asian/Pac. Islander	1%	3%
Native American	<1%	<1%

**Table 1.** Student Ethnicity (2003 -04)

Demographics	District	State Average
Free or reduced lunch program	68%	53%
Attendance rate	96 %	96%
English language learners	31%	15%

**Table 2.** District and state student demographic data (2003-04)

As demonstrated in both tables, the district using e2020 has a higher percent of students on free or reduced lunch programs and English language learners in addition to 10% of the district's students classified as special needs. Despite these figures, the e2020 program attained a 97% completion rate for general students and 78% completion rate for the special-needs students. The special-needs student completion rate was nearly double the standard rate for summer school completion.

**Results:** Further, during the 2004 – 2005 school year, approximately 2,828<sup>1</sup> students completed 4641 courses utilizing the e2020 Virtual Classroom. During the week of February 12 – 19, 2005, over 1,420 students logged onto to take 1,829 classes. The breakdowns of student completion by semester are shown below:

- During the fall 2004 semester, 832 students completed 1063 classes.

<sup>1</sup> A total of 2,218 students participated in the study, however some students participated in multiple sessions or courses and therefore were counted more than once.

- During the spring 2005 semester, 1433 students completed 2685 classes.
- During the summer 2005 session, 563 students completed 893 classes.

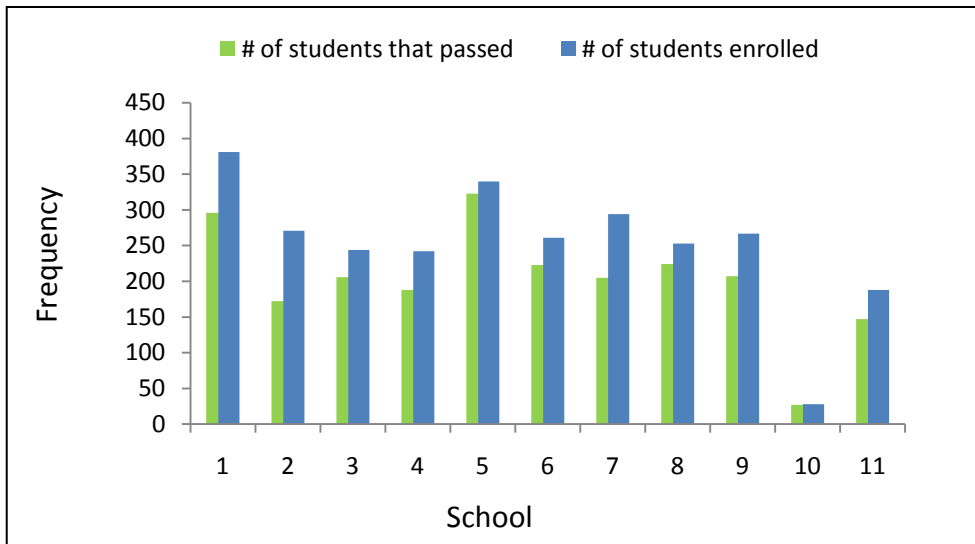
Finally, in 2006, the school district performed an evaluation through the Research, Accountability and Assessment Department on the effectiveness of e2020 with their students during the 2005-2006 school year. Nearly 17,000 students (approximately 16% of their student population) enrolled in e2020 for credit recovery purposes. Table 5 demonstrates 11 high schools and the number of students enrolling into the e2020 Virtual Classroom in comparison to the percent of those students receiving the recovery credit.

School	High School Population	Students that failed core course in traditional classroom	Students enrolled in e2020	Students earning credit w/ e2020	% of students receiving credit w/ e2020
1	1726	889	381	296	77.7%
2	1350	921	271	172	63.5%
3	1241	594	244	206	84.4%
4	1425	675	242	188	77.7%
5	2302	920	340	323	95.0%
6	1083	454	261	223	85.4%
7	1514	937	294	205	69.7%
8	1140	637	253	224	88.5%
9	2865	1137	267	207	77.5%
10	532	42	28	27	96.4%
11	1629	629	188	147	78.2%
<b>Total</b>	<b>16807</b>	<b>7835</b>	<b>2769</b>	<b>2218</b>	<b>80.1%</b>

**Table 3.** Rates of failing traditional courses and earning e2020 credit

As demonstrated above, on average, 80.1% of the students enrolled received credit through their high school intervention programs. The number of courses completed by 2,218 students during the 2005-2006 school year was 4,897.

Presenting this data using a graphical method (Figure 6), the blue bars represent the frequency of students that enrolled in required credit recovery due to failure of a core class in the traditional classroom. The green bars represent the frequency of students who participated in e2020 and received credit for course completion. For example, in High School 6, out of 1083 students, 454 failed a core course and required credit recovery and some enrolled in e2020 for credit recovery purposes. Of those who participated, 85% received credit for their work in e2020 for high school 6. Overall, for all high schools, e2020 was able to help 63.5% to 96.4% of all enrolled students recover their course credits.



**Figure 6.** Number of student enrolled as compared to number of students who passed e2020 credit recovery courses.

Of significant note are the student populations that were serviced while achieving those results. For this evaluation, the researcher broke the student populations into three categories: limited English proficient (LEP), special education, and at-risk. Table 4 demonstrates the breakdown of student enrollments per category by school.

School	High School Population	e2020 students	LEP	Special education	At-risk
1	1726	381	20	62	343
2	1350	271	45	24	233
3	1241	244	86	17	230
4	1425	242	21	28	211
5	2302	340	55	56	271
6	1083	261	34	14	234
7	1514	294	47	22	254
8	1140	253	32	12	230
9	2865	267	16	25	223
10	532	28	0	0	9
11	1629	188	16	14	154
<b>Totals</b>	<b>16807</b>	<b>2769</b>	<b>372</b>	<b>274</b>	<b>2392</b>

**Table 4.** Student population by need

This data indicates that all student samples can succeed in achieving credit recovery through e2020. A 78% completion rate for these special-needs students was nearly double the rate for special-needs students completing summer school courses using traditional modes of learning. Students falling under all three of these categories (and some falling under two or more), which have been traditionally understood as being a predictor of lower achievement, were able to successfully recover core course credit just as well as other populations of students.

## Case Study 4: Summer School in Hawaii

Educational Setting: A Hawaiian school district uses e2020 Virtual Classroom to provide additional credit recovery opportunities parallel to traditionally taught summer school programs despite large variances in demographic classifications across school populations.

Through a unique and innovative project, “It’s All About Kids” (IAAK) partnered with 8 high and intermediate schools in Hawaii to offer a virtual summer school program (some were strictly onsite and others were a combination of onsite and offsite). Seeking to provide opportunities to succeed, these schools and IAAK embarked on a venture to provide students an opportunity to acquire additional credits toward graduation or to recover credit for courses that were failed during the regular school year. The schools have a wide range of demographics made up primarily of Asian / Pacific Islanders. The 8 schools’ free and reduce lunch populations ranged from 7-29%. The statewide average for students receiving free and reduced lunch is 22.5%. Through the use of the e2020 Virtual Classroom and personalized support from IAAK, 600 students took advantage of this opportunity.

The Virtual Summer School was a 5- to 6-week offering for students to complete their instruction online through the e2020 Virtual Classroom. Students were required to attend an onsite student orientation and training prior to the start of their course. They were also required to attend onsite labs and take their cumulative and final examinations on campus while proctored by school staff. The remainder of the students’ work was completed online from any computer that could access the internet.

IAAK and e2020 customized 24 courses of the e2020’s 34 course offerings. The customization collaboration created specialized course offerings correlated with the Hawaii Content and Performance Standards which met specific school requirements for credit acquisition and credit recovery.

### Results:

- 24 customized courses for credit acquisition and credit recovery
- 600 participating students
- 98.5% completion rate for student enrolling and completing the courses
- 74.4% of students took courses for new credit acquisition
- 25.6% of students took courses for credit recovery