

PROVIDING ACCESS TO ALABAMA

*Connecting rural classrooms through
distance and online learning*

AN EDUCATION CASE STUDY

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EXECUTIVE SUMMARY

Nearly 32 percent of Alabama public school students were enrolled in rural schools in 2003, often in the state's most impoverished regions. These small, rural schools faced the challenge of providing enough highly qualified teachers to offer a comprehensive curriculum. In 2003, Alabama administered only 99 Advanced Placement (AP) exams per 1,000 juniors and seniors, which ranked Alabama as 14th out of the 16 southern states in availability of AP courses to high school students.

Launching ACCESS Distance Learning

In 2004, Alabama Governor Bob Riley convened a task force of representatives from public and private institutions across Alabama to create the blueprints for the Alabama Connecting Classrooms, Educators, & Students Statewide (ACCESS) Distance Learning Program,ⁱ with the mission to equalize education opportunities across the state. After agreeing to a design, the task force assigned the Alabama Department of Education (ALSDE) to launch and operate the initiative. ALSDE's ACCESS program office moved forward swiftly by building ACCESS across four dimensions:

Offering synchronous and asynchronous instruction

The task force directed ALSDE to offer courses through three delivery methods: 1) videoconferencing-based instruction (VCI), which featured synchronous teacher-student communication; 2) Web-based instruction (WBI), or online learning, which often involved asynchronous teacher-student communication; and 3) a blend of these two approaches.

The task force decided to use VCI because it already existed in 20 percent of high schools across the state and the concept felt familiar, as it resembled a normal classroom. The task force also liked its ability to deliver virtual field trips. WBI, on the other hand, offered flexibility with location, time, path, and pace. It also allowed for small enrollments for any given course, whereas VCI required traditional class sizes. After ACCESS became operational, ACCESS administrators began to favor a third option—the blending of VCI with WBI. By the end of 2010, ACCESS required that every ACCESS course include both synchronous and asynchronous instruction.

ⁱ Although Alabama calls ACCESS a “distance-learning” program, the more accurate description of ACCESS is as both a distance- and online-learning program. Online learning is education in which instruction and content are delivered primarily over the Internet. It is not always a subset of distance learning because the online teacher may not be geographically remote from the student.

Purchasing and developing content

The ACCESS program office purchased perpetual licenses for 32 courses from Florida Virtual School and 13 from Aventa Learning. It also created 20 of its own courses, as well as five non-credit remediation modules to prepare students for the Alabama High School Graduation Exam.

Upgrading equipment and infrastructure

The program office awarded 360 grants, ranging from \$50,000 to \$85,000, to equip each Alabama public high school with a “21st Century Classroom,” which included videoconference equipment, at least 25 tablet PCs, and other technology. The team also licensed Elluminate, which it later replaced with WebEx, for Internet conferencing.

The Alabama Supercomputer Authority worked with ACCESS to extend the high-speed AREN data network to the K–12 system. By the end of 2010 it had delivered broadband connectivity, at a minimum of 20 Mbps, to all 371 high schools and 133 central district offices and had begun to upgrade to 50 Mbps. It also organized a consortium of school districts to apply jointly for E-Rate funding to streamline the application process.

Providing central support

ACCESS’s support centers became the locus of training for adults involved with the initiative. By the end of 2010, the centers had recruited and trained a total of 659 WBI and VCI teachers. The support centers also held workshops for superintendents, technology coordinators, counselors, and principals.

Funding

The Alabama legislature funded ACCESS as a line item in the state budget. This funding model enhanced the program’s popularity with districts, as it did not compete directly for funding with them. The task force especially wanted impoverished districts, which needed access to broader education opportunities for their students, to see ACCESS as a net gain, not per-pupil loss, for their budgets. From 2008 to 2011, ACCESS funding stayed relatively flat around the \$20 million level. To date, the funding levels have been enough to accommodate students’ demand and not necessitate any wait lists.

Results

By the end of 2010, ACCESS was the third-largest state virtual school in the country, with 29,415 enrollmentsⁱⁱ in 2010 and 11,746 non-credit enrollments. ACCESS's enrollment growth rate declined in 2010 relative to that of other state virtual schools, largely because of ACCESS's focus on deploying technology infrastructure in 2010 rather than on increasing enrollments.

Alabama's K–12 education system claimed several successes during the span of ACCESS's existence. The number of AP test takers in Alabama public schools almost doubled from 2004 to 2010; the number of African American AP test takers more than quadrupled; and the number of qualifying exam scores more than doubled. Between 2002 and 2008, Alabama's high school graduation rate climbed from 62.1 to 69.0 percent, a gain that was 4.3 percentage points above the national average for that time period. Although other factors may have contributed to these improvements, ACCESS was the driving force in bringing advanced coursework and alternative education options to Alabama.

Changes and direction moving forward

Alabama made the "Advanced Academic Endorsement Diploma" the default diploma for the class of 2013. This diploma required the completion of at least 20 hours of an online course or experience. The state also removed the seat-time requirement to allow for credit recovery and credit advancement based on demonstrating competency, not completing a certain number of hours of coursework. This paved the way for more innovative scheduling options for schools. ACCESS piloted two credit-recovery courses in the spring of 2010.

ACCESS intended to focus on its facilitation of blended learning in the years ahead. It especially wanted to find ways to help face-to-face teachers use the learning management system and ACCESS's digital resources as sustaining technologies in their face-to-face classrooms.

ⁱⁱ An enrollment is defined as any instance of a student taking a half-credit course; one student, therefore, can be responsible for several enrollments.

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This case study explores how a team of stakeholders across Alabama's K–12 public school system came together to create the ACCESS Distance Learning program. The team's triple approach of offering online learning, interactive videoconferencing, and a blend of these two methods to students across the state helped thousands of Alabama students gain entree to a broader course catalog, including Advanced Placement courses, foreign languages, higher-level math and science courses, and electives. It also provided new opportunities for credit advancement, dropout recovery, credit recovery, and low-performance remediation.

Systemic rethinking of rural education

“Our education system is not the world-class system our children deserve,” Alabama Governor Bob Riley said in his inaugural address in 2003. Riley's feelings about education were personal. Born in rural Clay County, Ala., Riley's family had worked on ranches and farms for six generations. Neither of the two local high schools in the Clay County school district had ever offered an Advanced Placement (AP) course, with the exception of a single AP English class.

His district was not alone. Larry Raines, a past principal of Verbena High School in the center of Alabama (see map at **Figure 1**), said that Verbena's course scarcity typified that of rural Alabama schools. Before Riley's efforts, Verbena High School, a K–12 school with about 550 students, had never offered a single AP course. Its lone electives were agri-science and family & consumer science. It offered physics and chemistry on alternating years and provided no foreign languages other than Spanish I and II.

In 2003, almost 32 percent of public school students in Alabama enrolled in rural schools, often in the state's most impoverished regions, where they faced similar challenges to Verbena's.¹ Alabama only administered 99 AP exams per 1,000 juniors and seniors in 2003 and ranked 14th out of the 16 southern states in availability of AP courses to high school students.² Its dozens of small, rural schools faced the following endemic challenges:

- Providing a comprehensive curriculum. The state held all students to common performance standards, but remote schools had trouble offering all the required courses.³
- Recruiting, retaining, and compensating enough teachers.

Figure 1 Location of Verbena High School



- Meeting federal No-Child-Left-Behind requirements for “highly qualified” teachers.⁴ In many rural schools, teachers were required to teach more than one academic subject, which made the requirement for subject expertise difficult.
- Providing Internet connectivity and up-to-date technology.

A year after his inauguration, Riley directed the state superintendent of education, Dr. Joseph B. Morton, to convene a task force of education stakeholders to write a plan for providing equal access to high-quality instruction through distance learning. Riley’s effort was part of a recent sea change in the state, said Michael A. Ciamarra, the vice president of the Alabama Policy Institute, a public policy research organization in Birmingham. “Only in about the last eight years has there been a systematic focus to look objectively at Alabama’s education system... beyond the next budget cycle. It’s really about leadership, and Alabama, like other states, has had its study commissions, and before it was really a lot of talk.”

In response to Riley’s vision, Morton appointed a task force⁵ that included representatives from Alabama’s higher education system, school district administrators, the state department of education, and the Alabama Supercomputer Authority.⁶ The task force, which began meeting in August 2004, faced a formidable

challenge of getting everyone on the same page with one plan by November in time for the 2005 legislative session, said Dr. Melinda Maddox, the task-force leader and director of technology initiatives at the Alabama Department of Education.

From August to November 2004, the task force began to identify the structure for the new initiative, which they named Alabama Connecting Classrooms, Educators, & Students Statewide (ACCESS) Distance Learning. Their vision was to “provide equal access to high quality instruction to improve student achievement through distance-learning opportunities.”⁷ The team determined that small, rural, and disadvantaged areas of the state especially needed AP and dual-credit courses, foreign languages, higher-level mathematics and science courses, and electives.⁸

From the start, the task force tried to cooperate with local school leaders and teachers. “Ours was built with looking at being part of the school and not in competition with the school,” Maddox said. The task force felt this approach was more consistent with Alabama’s tradition of local control. The main tactic the group employed to avert controversy was to confine ACCESS’s mission to filling gaps where courses were not already available. By going after “nonconsumption,” meaning instances where the alternative was nothing at all, the task force helped local educators regard the initiative as an opportunity, rather than as a threat.⁹ This approach allowed the team to work quickly and agree to a high-level proposal for the governor in time for the November 2004 deadline.

By initially going after nonconsumption, the task force helped local educators view ACCESS as an opportunity, not as a threat.

The pre-implementation year

While the governor’s initial proposal for ACCESS began to circulate around the state legislature, the task force dug deeper into the specifics of implementing a statewide distance-learning agenda. The group worked on the plan from November 2004 to September 2005 by focusing on four objectives: 1) offering online, videoconferencing, and a blend of those two learning delivery methods; 2) building and buying content; 3) deploying equipment and infrastructure; and 4) providing programmatic resources and support.

Three delivery methods

As the task force researched best practices for distance learning, it heard disparate viewpoints. Some educators favored videoconferencing instruction (VCI) as the best delivery method. Videoconferencing involved a teacher at a “sending” school leading a classroom and delivering face-to-face instruction to a classroom of

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students, while students at up to three “receiving” schools participated through a sound system, microphones, and a monitor from their remote classrooms. A non-certified facilitator¹⁰ supervised the students in the remote classroom and ensured the technology was working. Each classroom participating in the videoconference had individual computers connected to the Internet. The teacher controlled the camera and could push out content to students over a learning management system.

The task force’s main attraction to VCI was that it provided synchronous instruction to “enable instructors to pace learning activities consistently [and] improve motivation in some learners through the use of familiar teaching methods.”¹¹ It considered synchronous videoconferencing as appropriate in instances where learners and teachers in different locations needed to work together or have live discussions as a group. These live lectures afforded an opportunity for students to learn to take notes and contribute to a discussion while it was occurring. It also thought that this format better facilitated the development of social skills.

Other educators touted the merits of a second delivery method, Web-based instruction (WBI), also called online learning. WBI referred to any time a computer delivered instruction and content over the Internet. The software could deliver content in various ways, including via text, graphics, audio, video, drills, an online teacher, games, assessments, and physical materials or labs. The medium allowed students some element of control over the time, place, path, and pace of their learning, if school policy permitted.

In its proposal to the governor, the task force characterized WBI as mostly asynchronous (that is, having a lag time between when the teacher presented content and students accessed it), with the option of some synchronous communication, such as web conferencing and voice tools. They envisioned a system where students submitted work to online teachers via a virtual drop-box, and the teacher responded later with feedback and guidance. The team noted that advantages of online learning were its flexibility and the potential for increased interaction between faculty and students. On the downside, they said that it required a high level of self-direction and independent learning. The team agreed that both online learning and interactive videoconferencing could be isolating to students, so they recommended that first-time students take online courses at the school during school hours under the direction of an online teacher and an on-site facilitator.

True to its collaborative style, the task force ultimately recommended that ACCESS offer both delivery methods. Although equipping schools with videoconferencing equipment meant spending an average of \$30,000 to \$32,000 more

per school, the task force thought VCI was crucial to achieve buy-in. “It’s hard for parents and adults to walk into a classroom and see kids online,” Maddox said. “They see VCI, and they understand it. They see a real teacher on the screen. The quality is so much better than WebEx¹²—it’s like you’re in the same room. Adults can relate better, so it buys acceptance [of nontraditional learning.]” Furthermore, 73 schools already had VCI labs, and the task force wanted to build upon that familiar foundation.

It also recommended a third alternative—combining videoconferencing and online learning together. The combination involved a teacher in the sending classroom teaching his or her face-to-face class, plus up to three remote classrooms, through the use of both videoconferencing for synchronous instruction, plus online learning for asynchronous activities. The teacher controlled both learning pathways and chose when to engage synchronously and when to allow the learning management system to deliver coursework online. The task force called this combination model “blended learning,” although a more accepted definition of blended learning refers to the blending of online learning with a supervised brick-and-mortar school. The team recommended that ACCESS pilot test blended learning (meaning, in the case of ACCESS and henceforth in this case study, a combination of VCI and WBI) in 16 sites during year one to understand its potential. The Appalachian Regional Commission¹³ contributed additional funds to bring the total number of pilot-test sites in year one to 24.

Developing content

In the 2004 plan the task force designated that the Alabama Department of Education (ALDSE) would manage ACCESS. ALSDE set up a program office in its headquarters and assigned Maddox to operate the program. Maddox reported to Superintendent Morton and Dr. Warren Pouncey, Deputy Superintendent of Education, Administrative, and Financial Services. By January 2006 Maddox had a staff of six to implement the project.

Among other administrative responsibilities, the program office was in charge of securing statewide licenses for software and managing content acquisition and development. Prior to the creation of ACCESS, Alabama students already were privy to a small number of state-funded online courses, if they could find a computer and the Internet. The University of Alabama housed the Alabama Online High School (AOHS), which offered a limited number of state-approved online courses for high school students, but made no provision for equipment. In addition, Troy University,

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a pioneer in distance learning in higher education, had used federal grant money to establish a dual enrollment program that allowed students to take college courses online while earning their high school diplomas. Other state entities, including the University of Alabama’s Academic Outreach program, offered some options. During the pre-implementation year, the task force decided to integrate the AOHS program into the ACCESS program, as well as add seven new online courses by the end of year one. It planned to purchase these new courses from outside providers.

The program office issued an Invitation to Bid to select a learning management system. It awarded the contract to Desire2Learn, a Canadian company that offered a suite of education tools and hosting capabilities. By the summer term beginning June 2006, the team had converted all AOHS courses to the new platform and replaced AOHS with ACCESS.

The ACCESS team also focused on developing opportunities for remediation. AOHS already offered preparation modules in math and science to help students pass the Alabama High School Graduation Exam, an exam that students had to pass to earn the standard Alabama high school diploma.¹⁴ ACCESS planned to broaden these modules to include language arts and social studies and to expand delivery to 4,000 students.

Equipment and infrastructure

In its initial budget, the task force made provision for upgrading hardware, particularly desktop workstations, to allow students to access online courses. It planned to award every high school up to \$85,000 to equip it with a “21st Century Classroom” that included videoconference equipment, at least 25 tablet PCs, wireless connectivity, interactive white boards, projectors, and scanners. Pursuant to this plan, the program office secured licenses with Elluminate, which it later replaced with WebEx, for Internet conferencing.

It also worked with the Alabama Supercomputer Authority to upgrade and extend AREN, the state’s network that brought Internet infrastructure to government, schools, and libraries. ACCESS’s ambition was for all schools and district offices to enjoy 10 Mbps¹⁵ connectivity by building out the AREN architecture. The team prioritized bringing the pilot sites onto the AREN network first. As an interim step, the Alabama Supercomputer Authority planned to install T1 lines to connect pilot sites to the Internet, so they could be operational while waiting for the full AREN implementation. The second priority was connecting the approximately 73 high

schools that already had interactive videoconferencing labs so that these schools could start sharing their videoconferencing courses with each other.

Resources and support

In early 2006 the program office issued a request for proposal to find partners to operate three support centers. The purpose of the support centers was to run the technical help desk; hire, train, and evaluate teachers; and advocate and plan for the future growth of ACCESS. Madison City Schools, Troy University, and The University of Alabama, College of Continuing Studies won the bids and became the three regional centers.

In its plans, the task force envisioned that ACCESS would provide top digital resources for teachers across the state. It called for the assembly of online multimedia resources in a central repository to help public school teachers enhance classroom instruction. It also planned to improve professional development by taking advantage of ACCESS's learning management system.

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Funding and budgets

The task force's plan called for the Alabama legislature to fund ACCESS as a line item in the state budget. This funding model meant that ACCESS did not compete with districts for per-pupil funds, which greatly enhanced its appearance to districts as an opportunity, rather than a threat. The task force especially wanted impoverished districts, which most needed access to broader education opportunities for their students, to see ACCESS as a net gain, not per-pupil loss, for their budgets.

From the start of the program to the fall of 2010, the lump-sum funding had been adequate to accommodate students' demand for ACCESS courses without necessitating a wait list. ACCESS could eventually experience a cap on the number of seats that it could offer each year, however, because the program does not get incremental revenue per enrollment.¹⁶ The task force asked for a total of \$25.8 million in funding by year three (see **Figure 2**).

Consistent with these annual budget requests, the Alabama legislature allocated lump sums to ACCESS each year (see **Figure 3**). In fiscal years 2009 and 2010, Alabama's legislature imposed an across-the-board proration on all line-items and enrollment funding in its budget because of public revenue shortfalls. The 2009 and 2010 allocation amounts in Figure 3 reflect an 11 percent and 9.5 percent

Figure 2 ACCESS Distance Learning proposed budgets, years 1–3

Expense	FY06	FY07	FY08
Local schools and school systems	\$7,161,000		
Deliver student credits in courses		\$3,456,000	\$8,556,000
Equip 21st Century Classrooms		\$1,481,532	\$10,864,096
AREN (Ala. Supercomputer Center)	\$1,392,000	\$2,754,500	\$3,200,000
Infrastructure and connectivity			
Web development			
Online course content	\$787,000	\$647,389	\$647,389
Maintaining current courses			
Purchasing/developing new courses			
Support centers	\$571,000	\$856,500	\$856,500
Providing professional development			
Facilitating distance learning			
Program office (Ala. Dept. of Ed.)	\$414,000	\$354,000	\$500,000
Staff and support			
Student support and registration			
Professional development			
Outreach and coordination			
Outside evaluator		\$60,000	\$100,000
Indirect Costs		\$715,079	\$1,114,111
TOTAL	\$10,325,000	\$10,325,000	\$25,838,096

proration, respectively. As of the publication of this case study, the legislature had not yet announced a 2011 proration.

ACCESS moves forward

By the end of 2010, the ALSDE program office and the directors of the support centers had made big strides to operationalize and expand the ACCESS vision across its four most important dimensions:

Offering three delivery methods

As it grew, ACCESS continued the dual approach of offering VCI and WBI. One of the most popular aspects of the VCI equipment was its ability to deliver virtual field trips. By the end of 2010, experts such as NASA and Antarctica scientists, foreign diplomats, and FBI Special Agents had organized and delivered virtual field

Figure 3 Alabama state legislature funding allocations for ACCESS, 2006–2011

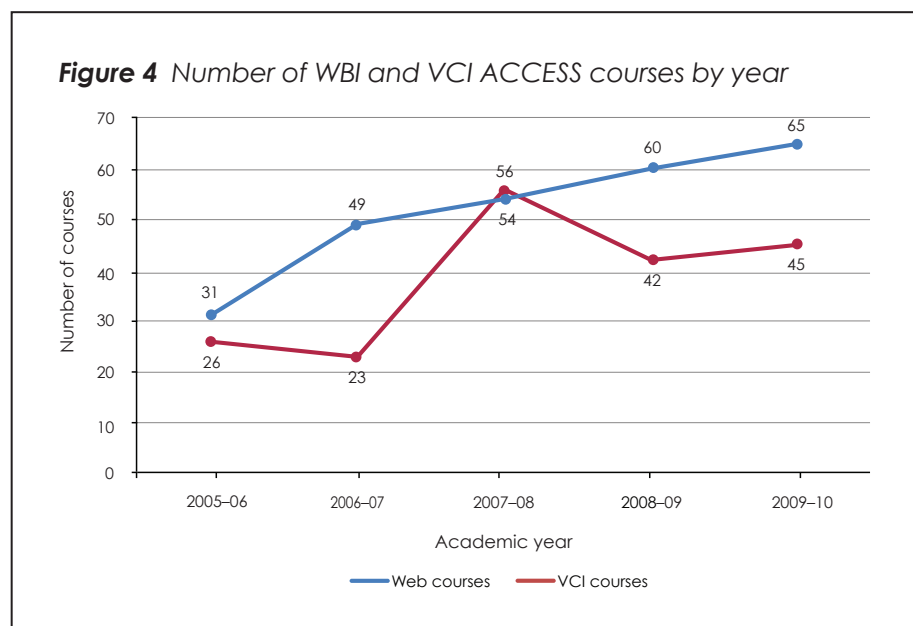
Fiscal year	Amount (\$)
2006	\$10,325,000
2007	\$10,325,000
2008	\$20,333,582
2009	\$22,802,685
2010	\$18,100,000
2011	\$19,078,600

trips to ACCESS classrooms via videoconference—a rare opportunity for students in rural Alabama who had had scant exposure to travel.

The ACCESS team found, however, that demand for WBI courses outpaced demand for VCI. WBI offered flexibility with location and time, whereas VCI courses required 21st Century Classrooms and fixed scheduling to accomplish the synchronous instruction. Some schools were maxing out capacity in their 21st Century Classrooms, and the transportability of Web-based learning became important. WBI also allowed for small enrollments for any given course, whereas the economics of VCI required traditional class sizes. Consequently, in all but one of its years in existence, ACCESS offered more Web courses than VCI courses (see **Figure 4**).

But the path that most excited ACCESS administrators was the third option—the blending of videoconferencing with Web-based instruction. Over time, VCI teachers had become more comfortable with using the learning management system and incorporating online elements into their synchronous instruction. Meanwhile, WBI teachers had begun to offer synchronous learning opportunities in their delivery, not only by scheduling videoconferencing times, but also by offering office hours powered by WebEx. In fact, by the end of 2010, ACCESS required that every ACCESS course include both synchronous and asynchronous instruction.

Maddox advocated aggressively for this blending because she considered it to be more effective pedagogically than either approach by itself. “Having students familiar with the blended-learning model and a learning management system will help prepare them for the college or career of their choice,” Maddox wrote in an article for *Principal Leadership*. “One of the best uses of an LMS for blended



learning that I have seen is using the discussion board for journaling....This has fostered increased communication among students—even among those who are sometimes very shy in traditional classrooms.”¹⁷

Maddox observed that incorporating videoconferencing into WBI was harder than the reverse because it required schedule coordination. Most often, she said, WBI teachers found that office hours were the easiest way to bring synchronous communication to their courses. ACCESS tried to assign a WBI teacher to only two or three schools to facilitate synchronous scheduling. ACCESS also encouraged WBI teachers to drive to the physical schools at least once during the course to introduce themselves to their students face-to-face. Support centers focused on this issue during ACCESS teacher training sessions.

Developing content

At the start of the launch, ACCESS purchased online courses from outside providers. It insisted on perpetual licenses and flat fees to avoid ballooning costs as student participation expanded, which was critical because of ACCESS’s lump-sum funding formula. It also required the freedom to customize the content for its academic requirements. Few vendors responded to these terms at first. Florida Virtual School and Aventa Learning,¹⁸ however, responded favorably and became the only outside content suppliers. By the end of the 2009–10 academic year,

ACCESS had purchased 32 courses from Florida Virtual School and 13 from Aventa Learning.

The state also created 20 of its own courses, 12 from the ground up and eight by redesigning AOHS courses. It developed courses by carefully selecting and training subject matter experts, who worked with an instructional designer and peer reviewers to outline, develop, and pilot test each course prior to its launch. In some cases, course developers used open educational resources such as HippoCampus, a grant-funded open curriculum project of the Monterey Institute for Technology and Education; the Teachers' Domain, an online library for free digital media resources produced by public television stations; and curriculum materials that individual organizations, such as WGBH television and the Public Broadcasting Service, offered.

In addition, ACCESS developed three remediation modules to prepare students for the Alabama High School Graduation Exam. It used Moodle, a free, open-source learning management system, to deliver these not-for-credit modules. It also made use of two remediation modules that AOHS had built.

By the 2009–10 school year, ACCESS offered a total of 115 courses (see **Appendix A**).

Equipment and Infrastructure

By the fall of 2009, ACCESS had awarded 360 grants, ranging from \$50,000 to \$85,000, to Alabama public high schools for 21st Century Classrooms (one per school). Those new labs, combined with the fact that 11 schools already had a complete distance-learning facility prior to ACCESS, meant that by the end of 2009, all 371 public high schools in Alabama had a distance-learning lab with VCI equipment, interactive white boards, and at least 25 tablet computers.

Furthermore, by the end of 2010, the Alabama Supercomputer Authority had delivered broadband connectivity over the AREN network, at a minimum of 20 Mbps, to all 371 high schools and 133 central district offices in the state and had begun to upgrade to 50 Mbps, in keeping with demand for faster speeds. The AREN infrastructure improved reliability because it delivered all ACCESS IP traffic over a managed network with network “quality of service” guarantees.

To supplement funding resources for network development, the Alabama Supercomputer Authority organized a consortium of all the school districts in the state to apply jointly for E-Rate funding, a federal program that provided discounts on Internet and telecommunications services to schools and libraries.

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Resources and support

ACCESS's support centers became the locus of training and development for adults involved in delivering the program. In its 2011 briefing about ACCESS to the legislature, ALSDE stated that these support centers are “a vital link in program management in that they provide continuous assistance, communication, and training to counselors, principals, teachers, facilitators, and students in the learning management system, the registration portal, policies, and procedures. This regional model of support has enhanced the rapid growth and implementation of the ACCESS program.”¹⁹

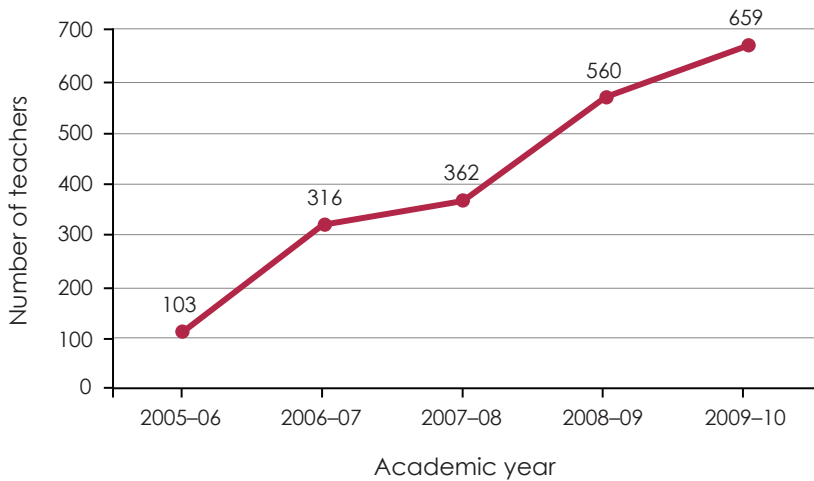
The centers recruited and trained a total of 659 WBI and VCI teachers by the end of 2010 (see **Figure 5**).²⁰ Professional development followed the Southern Regional Education Board's and iNACOL'sⁱ Guidelines for Professional Development of Online Teachers. The four-part development plan for teachers included: 1) three days of initial face-to-face training; 2) leader-to-protégé mentorships for new ACCESS teachers for the first and second terms of their teaching; 3) ongoing professional development, including the completion of a minimum number of hours of training per year; and 4) “anytime” training available over the learning management system.²¹ During training, teachers learned how to use Desire2Learn, manage equipment in the 21st Century Classrooms, and adhere to ACCESS policies, such as rules for teacher communication with students. The learning management system was the priority topic because it was the central medium for online and blended courses.

The support centers also held workshops for superintendents, technology coordinators, and principals, in part to persuade them to use ACCESS in their schools. Facilitators also attended sessions to learn about equipment settings, how students submit work online, and how to facilitate the Moodle remediation modules.

Under program rules, all ACCESS teachers had to be Alabama certified and meet federal standards for “highly qualified.” Because the online delivery method in Alabama was mostly asynchronous, online teachers could teach traditional classrooms during the day and then manage an online course from their homes at night. Indeed, most of the ACCESS teaching staff had regular teaching jobs during the day. ACCESS officials said that at first they had to recruit teachers to sign on, but that over time a wait list formed. ACCESS paid its online teachers \$150 per

ⁱ iNACOL is the international association for K–12 online learning.

Figure 5 Number of ACCESS teachers by academic year



student per half-credit. VCI teachers at sending schools earned \$75 per student per half-credit if they taught the course as part of their instructional duties; adjunct teachers who taught VCI courses at a support center earned \$150 per student per half-credit.²²

Results

Enrollments in ACCESS grew steadily over time, despite the program's flat budget. This growth was possible for several reasons. ACCESS had purchased perpetual content licenses at a fixed rate, so incremental course enrollments did not create additional content costs. Although its VCI courses often filled to capacity, the WBI courses did not require 21st Century Classroom seats, and thus could accommodate more students simultaneously. Furthermore, the program office told schools that if they wanted additional equipment beyond the single 21st Century Classroom per school, they were responsible for purchasing it themselves. This freed ACCESS from many of the variable equipment costs. It also meant that schools increasingly opted for online courses over videoconferencing courses because the WBI courses did not require as much equipment.

By the 2009-20 school year, enrollments in ACCESS had grown to 41,161 (see **Figure 6**).

The 2010 *Keeping Pace Report* listed ACCESS as the third largest state virtual school in the country, surpassed only by the Florida Virtual School, which reported

Figure 6 Total number of ACCESS enrollments by type and academic year

Enrollment type	2005–06	2006–07	2007–08	2008–09	2009–10
Credit enrollment	4,382	9,508	22,264	26,197	29,415
Non-credit enrollment	704	4,108	13,592	6,059	11,746
TOTAL	5,086	13,616	35,846	32,256	41,161

213,926 enrollments in 2009–10, and the North Carolina Virtual Public School, which reached 73,658 enrollments in 2009–10.²³ The report noted, however, that ACCESS's growth rate lagged significantly behind that of many other state virtual schools (see **Figure 7**).²⁴

The ACCESS program office said that this slower enrollment growth was attributable to its push in 2009–10 to equip all Alabama's high schools with a 21st Century Classroom. The team installed 190 of these labs during this time, almost twice as many as in 2008–09. With every high school now equipped, the team planned to resume its enrollment growth in the months ahead. Further research is necessary to understand the extent to which ACCESS's growth rate may be limited in the future by its pattern of relatively flat lump-sum allocations.

Maddox said that if lack of funding became a problem in the face of growing demand, she expected that ACCESS would move to a poverty-based funding model and serve high poverty students first to foster the goal of equity for all public high school students.

During the span of ACCESS's existence, Alabama's K–12 system as a whole experienced several successes. The number of AP test takers in Alabama public schools almost doubled from 2004 to 2010. The number of African American AP test takers more than quadrupled, and the number of qualifying exam scores more than doubled. Five times more low-income students took AP exams, and three times more scored three or higher.²⁵ Between 2002 and 2008, Alabama's high school graduation rate climbed from 62.1 to 69.0 percent, a gain that was 4.3 percentage points above the national average for that time period.²⁶ Although other factors may have contributed to these improvements, ACCESS was the driving force in bringing advanced coursework and alternative education options to Alabama.

Figure 7 State virtual school enrollment growth, from 2008–09 to 2009–10 school years

Program name	Percent annual change
Texas Virtual School Network	1,713%
North Carolina Virtual Public School	369%
Idaho Digital Learning Academy	49%
Iowa Learning Online	49%
Florida Virtual School	39%
New Hampshire Virtual Learning Academy Charter School	38%
New Mexico IDEAL	37%
South Carolina Virtual School	32%
Louisiana Virtual School	27%
Wisconsin Virtual School	26%
South Dakota Virtual School	25%
West Virginia Virtual School	24%
Georgia Virtual School	22%
Virtual Virginia	20%
Tennessee—e4TN	15%
Alabama ACCESS	11%
Utah Electronic High School	0%
Connecticut Virtual Learning Center	0%
Hawaii Virtual Learning Network	0%
North Dakota Center for Distance Education	-3%
Arkansas Virtual High School	-6%
Michigan Virtual School	-6%
Mississippi Virtual Public Schools	-9%
Maryland Virtual Learning Opportunities	-11%
Illinois Virtual School	-16%
Colorado Online Learning	-22%
Kentucky Virtual Schools	-30%
Missouri Virtual Instruction Program	-82%
Montana Digital Academy	N/A
Vermont Learning Cooperative	N/A

Source: Adapted from the 2010 *Keeping Pace Report*

Anecdotal evidence of success

When it began rolling out the program, ACCESS's program office encountered widespread local resistance. The following three vignettes typify how the local response to the program evolved over time from reluctance to acceptance.

“That’s a concern
for us as educational
administrators—to
make sure our kids
have quality courses...”

—Don Hulin, principal of
Hoover High School

Verbena High School

At first Raines was reluctant to offer ACCESS classes to Verbena High School students. He was concerned that the state’s newly minted distance-learning program would be a technological distraction, a slight to his solid teaching staff, and an encroachment on limited physical space in the school.

Verbena High School was an obvious target for ACCESS’s first round of expansion following the initial pilot test. The school served a rural, low-income community, and it offered no AP courses. Against his instinct, Raines decided to experiment with the program on a trial basis. He eventually became one of its biggest supporters. “I made a mistake,” Raines said. “The 21st Century Classroom is full every day now. We’re making tremendous use of it. The space is being occupied maybe more than before.” Even during summer break, students used the lab to take remediation modules to prepare for the Alabama High School Graduation Exam.

Hoover High School

Fifty-seven miles and an economic world away from Verbena, Don Hulin, the principal of Hoover High School, located in a rich suburb of Birmingham, also dragged his heels about ACCESS. He hesitated to become a receiving school with the videoconferencing because it meant that his students would take courses that originated with teachers and schools elsewhere in the state. Hulin was concerned the sending schools would be a step down from his school’s top-notch staff. “I’m not boasting, but our high academic standards we have set in Hoover city schools may be much higher than some of the other areas we’re dealing with in the state of Alabama,” he said. “That’s a concern for us as educational administrators—to make sure our kids have quality courses that meet the Hoover High standards.”

After experimenting with ACCESS, Hulin became a fan, but for different reasons from Raines. He observed that ACCESS provided a helpful way to address scheduling conflicts among his busy students. “Given our wealth of technology, our [International Baccalaureate] program, academies, and schedules allowing students to have interests whether extracurricular or academic, we can maneuver those kids’ schedules to offer them a variety of different courses through ACCESS,” he said. The program also provided his students with a communication bridge to their less-fortunate peers in other parts of the state.

L.B. Wallace School

L.B. Wallace School, located in Mt. Meigs, was one of the state's five facilities for juvenile offenders. Its principal, Cleveland B. Gavin, was not sure if ACCESS would solve his school's unique challenges, which included a highly transient student population as students flowed in and out of the institution, an extensive need for remedial education, and students who required an especially high level of oversight to keep them progressing. Furthermore, schools in the juvenile-correction district faced tricky rules about student privacy, which made online communication with the outside world complicated.

Gavin found, however, that ACCESS brought new opportunities for his students. ACCESS facilitated an easier transition for juvenile offenders when they returned to their traditional schools; they could complete ACCESS courses anywhere, and this geographic flexibility offered an enormous benefit. In addition, ACCESS provided a much richer course catalog for the incarcerated youth. Prior to ACCESS, most students took basic remedial courses to graduate with a high school equivalency degree. But ACCESS "played a central role in students receiving credits that they otherwise wouldn't have been able to get—elective credits that they needed for the requirements for the [traditional] diploma," Gavin said. A small group of motivated Wallace students earned the traditional diploma, rather than the equivalency degree, thanks to ACCESS.

The First Choice
diploma required
students to complete
at least 20 hours of
an online course or
experience.

Changes and direction for the future

In May 2008, the Alabama State Board of Education adopted "First Choice," a plan to increase the expectations of and learning for Alabama high school students. The plan made the "Advanced Academic Endorsement Diploma" the default diploma for all entering ninth graders in 2009–10. This diploma required algebra II with trigonometry, two foreign language credits, passing all five sections of the Graduation Exam, and completing at least 20 hours of an online course or experience.²⁷ The State Board felt that this online requirement was important because of the growing centrality of the Internet in the workplace.

First Choice also eliminated the seat-time requirement to allow for credit recovery and credit advancement based on students demonstrating mastery, not on their completing a set number of hours in class. If students failed a class, they could work on the failed portions of the course and earn promotion without retaking the entire course. In the fall of 2010, ACCESS piloted an online credit-recovery option

The elimination of the
seat-time requirement
paved the way for
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for two courses: algebra I and English 9. At the start of each course, the traditional teacher who had given his or her student a failing grade communicated with the online teacher about the standards that the student did not master. The online teacher then assigned the student a pre-test and a series of lessons specific to the deficient skills, followed by a post-test. Upon successful completion of the necessary post-tests, the student earned credit for the entire course.

Likewise, First Choice allowed students to advance quickly through a course without adhering to a seat-time metric. They completed a course when they passed the required assessments, not when they clocked enough hours in class. The elimination of the seat-time requirement paved the way for more innovative scheduling options for Alabama's schools.

The ACCESS office planned to focus on blended learning in the years ahead. In its planning document for 2011 to 2016, ACCESS referred to itself as not just a distance-learning program, but as a “distance- *and* blended-learning program.” ACCESS wanted to “refine and expand the blended model of instruction to every high school.”²⁸ This mostly meant finding ways to help face-to-face teachers use ACCESS course content and the learning management system as sustaining technologies²⁹ in their face-to-face classrooms. “Our goal is to keep FTEs at the schools,” said Maddox, “but let ACCESS bring the digital content and professional development for teachers. Schools will grow in capacity to deliver blended learning, and ACCESS will develop the digital resources in a cost efficient model as well as provide professional development in proven blended teacher delivery methods.”

Dr. Tommy Bice, deputy state superintendent of education for instructional services, spoke of his aspirations for digital learning in Alabama:

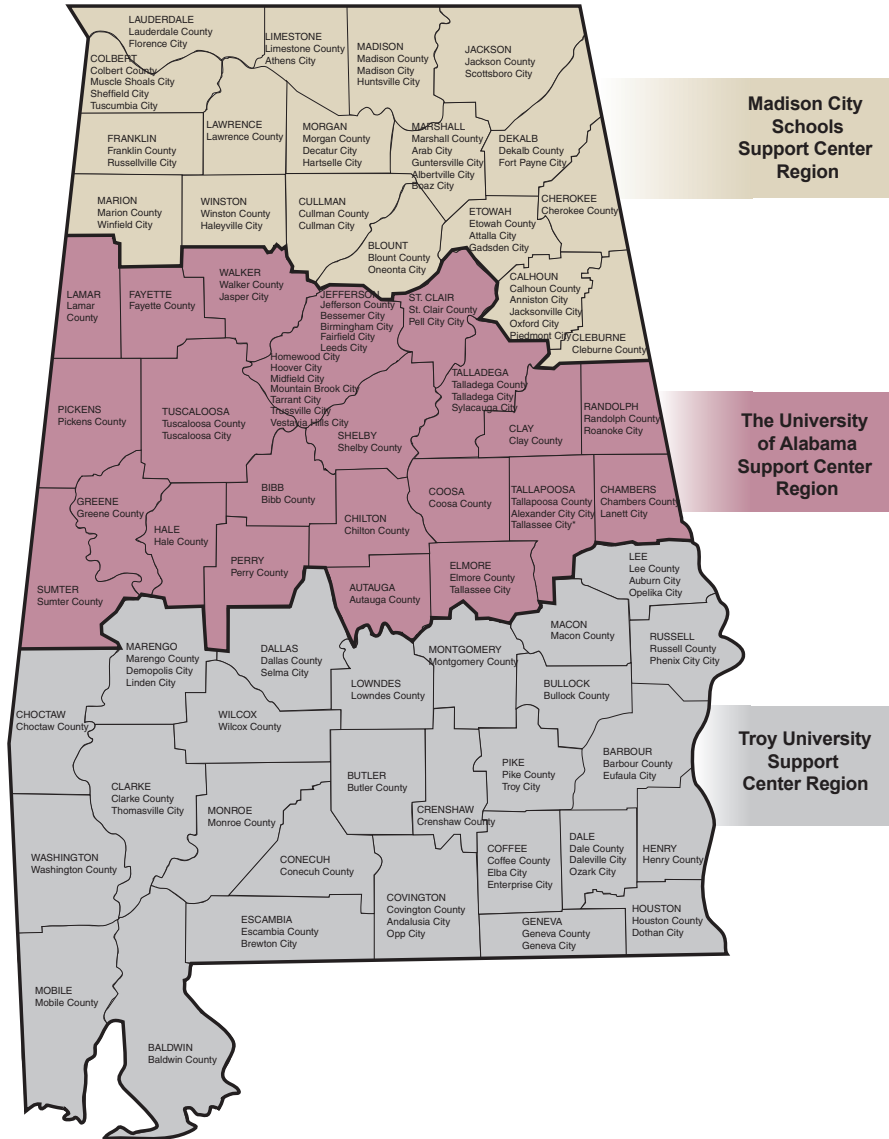
The world I see offers a broader menu than we currently have, leveraging off our successes to this point, so that schools, districts, and teachers can customize learning environments for each student....The biggest barriers are the adults who are part of the decision-making process. ‘This isn’t the way we went to school,’ they say. We need to change the definition of school, while still holding onto the community, but radically changing delivery. We still teach geometry, but it may not be within the four walls of the classroom. The kids are ready.

Appendix A *Summary of half-credit ACCESS enrollments;
spring, summer, fall 2009*

ACCESS course	Number of enrollments	ACCESS course	Number of enrollments
Algebra I	406	AP U. S. History	155
Algebra IA	359	Calculus	0
Algebra IB	378	Precalculus	450
Algebra II	346	Algebra II with Trigonometry	566
Geometry	584	Algebra III with Statistics	14
Geometry B	32	French I, II, III	1,170
Algebraic Connections	73	German I, II, III	753
Biology	611	Latin I, II, III	642
Physical Science	479	Spanish I, II, III, IV	5,050
Environmental Science	772	Mandarin I, II	143
Marine Science	701	Human Anatomy & Physiology	50
Forensic Science	20	Physics	403
U. S. History to 1877	251	Chemistry	209
U. S. History 1877–Present	610	Web Design I, II	1,272
U. S. Government	347	Computer Programming BASIC	129
World History	391	Accounting	120
Economics	350	Creative Writing	1,435
English 9, 10, 11, 12	2,317	History of the Holocaust	4
Health Education	997	Holocaust through Literature	5
Visual Arts I	18	Introduction to Drama	0
AP English Language and Comp.	237	Poetry	0
AP English Literature and Comp.	231	Psychology	705
AP Art History	67	Sociology	14
AP Biology	75	Nutrition and Wellness	305
AP Chemistry	8	Floral Design & Interior	74
AP Calculus AB	155	Global Studies	364
AP Statistics	39	Personal & Business Finance	30
AP Computer Science	32	Personal Finance	257
AP Macroeconomics	18	Workforce Essentials (Coordinated Studies)	655
AP Psychology	128	Career Technical Core	95
AP U. S. Government	96	TOTAL ENROLLMENTS	26,197

Source: Office of Technology Initiatives,
Alabama State Department of Education

Appendix B Alabama school districts and ACCESS Distance Learning support center regions



Source: Office of Technology Initiatives,
Alabama State Department of Education

Notes

- ¹ Elizabeth Beeson and Marty Strange, “Why Rural Matters: The Continuing Need for Every State to Take Action on Rural Education,” Rural and Community Trust, February 2003, <http://www.ruraledu.org/articles.php?id=2138>.
- ² “A Plan for Distance Learning,” Governor’s Task Force on Distance Learning, November 1, 2004, <http://accessdl.state.al.us/accessplan.pdf>.
- ³ Furthermore, if students wanted to earn a high school diploma “with Advanced Academic Endorsement,” they had to complete at least two credits in the same foreign language and algebra II with trigonometry. Some rural schools could not offer these prerequisites.
- ⁴ The No Child Left Behind Act of 2001 is a federal law that reauthorized several federal programs aimed at primary and secondary schools and focuses on improving accountability. As part of the legislation, states receive federal grants for increasing the number of “highly qualified” teachers, principals, and assistant principals in schools. To be deemed highly qualified, teachers must have the following: 1) a bachelor’s degree; 2) full state certification or licensure; and 3) demonstrated competency, as defined by the state, in each core academic subject they teach. See “No Child Left Behind: A Toolkit for Teachers,” U.S. Department of Education, 2004, <http://www32.ed.gov/teachers/nclbguide/nclb-teachers-toolkit.pdf>.
In March 2004, the Department of Education relaxed the highly qualified rules for rural teachers as follows: “Teachers in eligible, rural districts who are highly qualified in at least one subject will have three years to become highly qualified in the additional subjects they teach. They must also be provided professional development, intense supervision or structured mentoring to become highly qualified in those additional subjects.” See “Fact Sheet: New No Child Left Behind Flexibility: Highly Qualified Teachers,” U.S. Department of Education, March 2004, <http://www2.ed.gov/nclb/methods/teachers/hqtflexibility.html>.
- ⁵ In many respects, the task force had the trademarks of a *heavyweight team*. This term refers to a group of people whom a leader pulls away from their functional organizations and places into a team to create new processes or new ways of working together. By stepping away from their functional organizations, members of a heavyweight team bring their expertise with them, but are freer to focus on making the collaborative project successful, rather than on optimizing outcomes for their own functional group. Heavyweight teams contrast with *lightweight* and *functional teams*, which leaders use to accomplish projects that do not require new processes. They also differ from *autonomous teams*, which have enough independence from the parent organization that they can develop both new processes and new priorities, which is necessary for launching disruptive innovations. See Kim B. Clark and Steven C. Wheelwright, “Organizing and Leading Heavyweight Development Teams,” *California Management Review* 34 (Spring 1992): pp. 9–28, as adopted by Clayton M. Christensen and Michael E. Raynor, *The Innovator’s Solution* (Boston: Harvard Business School Press, 2003), pp. 178–211.
- ⁶ The Alabama Supercomputer Authority is a state-funded corporation that runs the Alabama Supercomputer Center. Located in Cummings Research Park in Huntsville, the Alabama Supercomputer Center serves as the network operations center for the Alabama Research and Education Network (AREN), the state’s high-speed network that provides Internet access for the state government, higher-education system, K–12 system, and libraries. “Alabama Supercomputer Authority, <http://asc.edu>, accessed October 2010.
- ⁷ “A Plan for Distance Learning,” November 1, 2004.
- ⁸ “A Plan for Distance Learning,” Governor’s Task Force on Distance Learning, September 2006, available at “Alabama ACCESS Distance Learning 2006–2010 Plan” (<http://accessdl.state.al.us/HistoryInfo.html#planupdates>).
- ⁹ For a detailed discussion about framing an innovation as an opportunity rather than threat, see Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson, *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns* (New York: McGraw Hill, 2008), pp. 73–74.

- ¹⁰ Alabama required that facilitators had completed training in online methodology and technical aspects of Web-based instruction through ACCESS and had passed mandatory background checks. Facilitators did not need to have teaching credentials.
- ¹¹ “A Plan for Distance Learning,” November 1, 2004.
- ¹² Cisco’s WebEx is an Internet platform that combines real-time desktop sharing with phone conferencing so that everyone participating sees the same thing on their computer screens during the conference call. WebEx makes activities such as online meetings, training events, webinars, and synchronous classroom instruction possible.
- ¹³ The Appalachian Regional Commission is a federal and state partnership that supports sustainable community and economic development for the people of Appalachia. See www.apc.org.
- ¹⁴ Alabama gave its students six opportunities to pass this graduation exam: one in grade 10, one in grade 11, another during the summer between grades 11 and 12, and three during grade 12. All students had the pass the exam to receive a high school diploma, with the exception of special education students, who could earn an occupational diploma without taking the graduation exam. Any student who exited school without passing all subject-area tests on the graduation exam could continue to take the exam at every administration. In addition, any student could return to high school for remediation until the age of 21. Alabama has plans to discontinue this exam and move to end-of-course testing. See “Great Expectations: A Guide to Alabama’s High School Graduation Exam,” Alabama Department of Education, Revised 2004 (http://www.alsde.edu/general/great_expectations.pdf).
- ¹⁵ Mbps stands for megabits per second. The Federal Communication Commission’s National Broadband Plan sets a target of actual download (i.e., to the customer) speeds of at least 4 Mbps and actual upload (e.g., from the customer) speeds of at least 1 Mbps to yield adequate broadband. For a closer look at developing a statewide education data network, see Kerry Herman and Heather Staker, “The North Carolina School Connectivity Initiative: A Public-Private Approach to Improving School Data Networks,” Innosight Institute, December 2010, <http://www.innosightinstitute.org/media-room/publications/education-publications/the-north-carolina-school-connectivity-initiative/>.
- ¹⁶ For a helpful discussion of a parallel situation with the original funding model for Florida Virtual School, see Katherine Mackey and Michael B. Horn, “Florida Virtual School: Building the First Statewide, Internet-based, Public High School,” Innosight Institute, October 2009, <http://www.innosightinstitute.org/media-room/publications/education-publications/florida-virtual-school/>.
- ¹⁷ Melinda Maddox, “Blended Learning: The Internet and the Classroom,” *Principal Leadership*, December 2009, pp. 72–75.
- ¹⁸ KC Distance Learning purchased Aventa Learning in 2007. K12, Inc. purchased KC Distance Learning in 2010.
- ¹⁹ “A Plan for Continued Excellence,” Task Force on Distance and Blended Learning, January 2011, <http://accessdl.state.al.us/Documents/NewPlan/ACCESSPlanFINAL.pdf>.
- ²⁰ “Historical Data Summary,” internal document provided by ALSDE.
- ²¹ “A Plan for Continued Excellence.”
- ²² “ACCESS Distance Learning E-Teacher Pay Scales,” internal document provided by ALSDE.
- ²³ John Watson, et al., “2010 Keeping Pace with Online Learning,” Evergreen Education Group, <http://kpk12.com/reports/graphics/>, accessed January 2011.
- ²⁴ Watson, <http://kpk12.com/reports/graphics/>.
- ²⁵ “A Plan for Continued Excellence.”
- ²⁶ Robert Balfanz et al., “Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic,” Civic Enterprises, Everyone Graduates Center at John Hopkins University, and America’s Promise Alliance, November 2010, <http://www.civicerprises.net/pdfs/gradnation.pdf>.
- ²⁷ “Alabama’s ‘First Choice’ and Supporting Programs,” Alabama Department of Education, 2008, http://www.alsde.edu/general/Firstchoicebrochure_08_2008.pdf.
- ²⁸ “A Plan for Continued Excellence.”

²⁹ A sustaining technology makes a product or service perform better in ways that customers in the mainstream market already value. For example, interactive white boards are sustaining technologies because they can enhance traditional lecture-style teaching by providing something potentially more engaging than had previously been available. In contrast, disruptive innovations create an entirely different learning experience through the introduction of a new product or service, one that's actually worse, initially, when judged against the performance metrics that the traditional school system values. See *Disrupting Class*.

About Innosight Institute

Innosight Institute, founded in May 2007, is a 501(c)(3) not-for-profit think tank whose mission is to apply Harvard Business School Professor Clayton Christensen's theories of disruptive innovation to develop and promote solutions to the most vexing problems in the social sector.

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