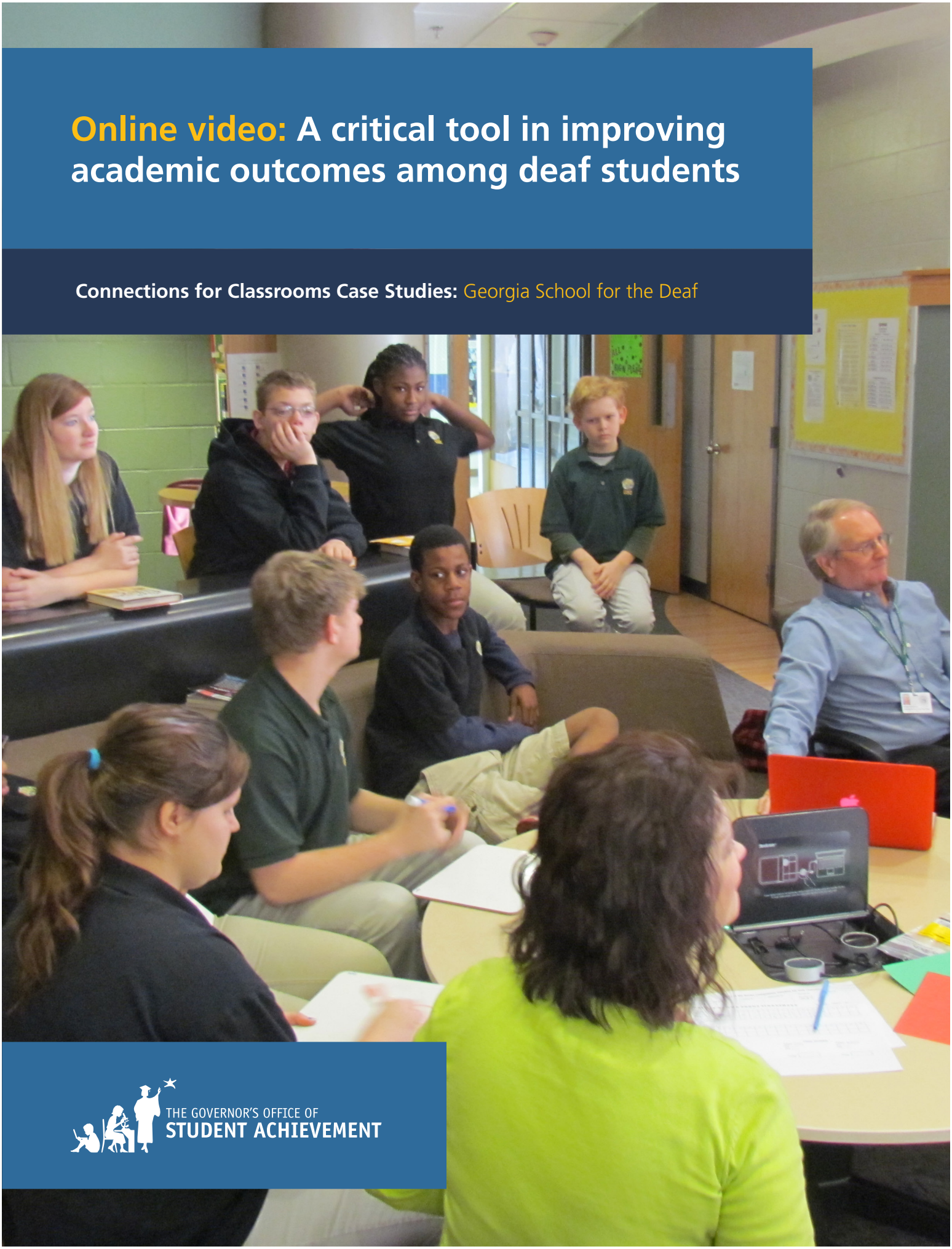
Online video: A critical tool in improving academic outcomes among deaf students

Connections for Classrooms Case Studies: Georgia School for the Deaf



THE GOVERNOR'S OFFICE OF
STUDENT ACHIEVEMENT

Online video: A critical tool in improving academic outcomes among deaf students

Background

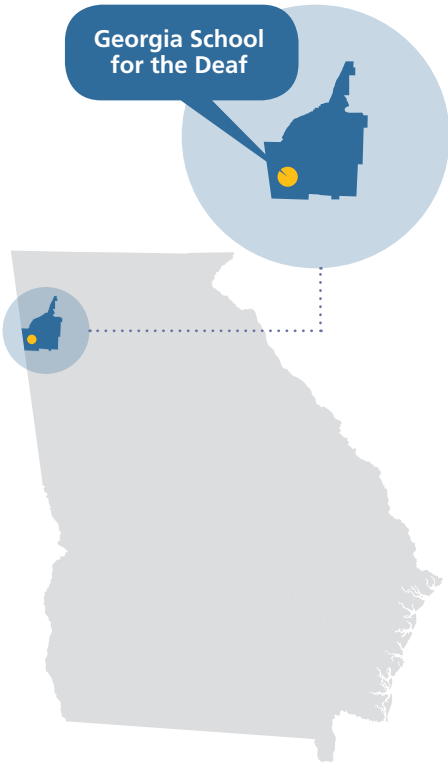
The Georgia School for the Deaf (GSD) is a state-operated residential school for students who are deaf and hard of hearing. GSD has a large campus comprised of 12 buildings on 480 acres in Cave Spring, GA.

Students at GSD come from towns and cities across the state and range in age from three through 21. Among the 102 students at GSD, the majority reside at school with a small number of day students from nearby school districts. GSD students are racially and ethnically diverse, and 46 percent qualify for free or reduced price lunch. Many of the students who enroll at GSD arrive with significant language challenges and may be multiple years below grade level.

GSD provides a bilingual education program of American Sign Language (ASL) and English. ASL is considered to be the student's first language and is necessary to support their education in English. Because ASL is a visually based language that relies on manual signs, facial expressions, and head and body movements to convey meaning, instructional technology, specifically video, can provide important learning opportunities for GSD students. In fact, GSD Superintendent Leslie Jackson stated that these tools are "vital to our education process [at GSD]."

GSD applied for, and received, Connections for Classroom (CFC) grant funds in 2014 to augment its existing network with the highest capacity wireless arrays available. Prior to the upgrades, demands from mobile and wireless devices routinely exceeded the capacity of the network; it was not able to support the high frame rate necessary for effective ASL communication. For deaf students, interrupted or lagging video makes it impossible to follow the meaning of what is being said. Thus, the lack of adequate network capacity created a significant barrier to student learning, both inside and outside the classroom.

As a result of the CFC grant, GSD's upgraded network is now more reliable and accessible for both classroom instruction and independent learning in academic buildings and dormitories. Access to consistent and dependable video content enables GSD teachers to realize the school's digital learning goals, including use of hybrid, flipped and distance instructional models, expanded content, and alternative assessment. Accessible video content also provides academic support to students through a personalized learning approach.



CFC Award Amount:

$30,958.41

Federal E-rate Amount:

$9,180.00

Total

$40,138.41

THE GOVERNOR'S OFFICE OF
STUDENT ACHIEVEMENT

Digital Learning at GSD

Over the past five years, GSD invested in a number of tools to leverage the potential of technology to support their unique bilingual curriculum. Each classroom is equipped with a set of tablets and laptops, a video camera, and an interactive white board. Additional digital displays hang in hallways and common areas such as the cafeteria. Collaborative workspaces in the media center are also furnished with large displays, and additional equipment is provided to students in dormitories.

Video is integrated within the educational program at GSD in a variety of ways:

Recorded classroom presentations: Teachers at GSD increasingly record classroom presentations and make them available to students through their course webpages. Recorded lessons give students the opportunity to preview content in advance of class meetings and offer them control over the time, place, and pace of their learning. Using this flipped or hybrid instructional model, students utilize time outside of class to build background knowledge and class time for project-focused work or discussion.

Students also rely on classroom videos to reinforce or expand their learning. Deaf students are not able to take notes in class while they are receiving instruction (unless time to do so is explicitly built into the classroom schedule). In order to retrieve classroom content, students must rely on memory. However, when teachers record lessons, students can revisit course material as needed to support homework and recall. This is a crucial support for students since homework is typically in written English, but classes are conducted in ASL. Without video, students have no reference for their work.

Resources to empower students: Teachers at GSD have created short instructional videos in academic subjects to provide additional visual support in ASL for specific concepts. These videos are designed to supplement or scaffold student learning. In one example (see graphics), Loren Frick, a middle school math teacher, and his students created videos to explain specific topics in math. In another example, Andrew McAllister, a high school English teacher, described his plans to create a video dictionary for students. He explained that because of students' varied reading levels and needs, "I can't be there for every student at the same time. For example, one class might have seven students, and they all need my assistance…I want to make a dictionary of correct signs and provide examples of other vocabulary so they can look it up… themselves. We're trying to empower the students instead of being reliant on the teachers all the time."

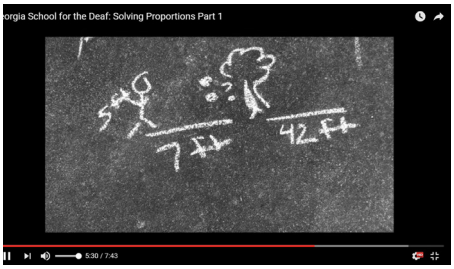
Teachers also provide students with links to a variety of high quality video materials to enhance and expand existing course materials.

Alternative assessment: Video technology provides students with new opportunities for alternative assessments. Students can record themselves signing in ASL to demonstrate their knowledge, rather than submit a written response in English each time. Several online video programs and software in use at GSD allow teachers to provide feedback on student work in ASL. The feedback may be inserted as video comments embedded into students' videos.

Collaboration: Video conferencing provides new opportunities for students at GSD to communicate, outside of class periods or school hours, in their primary language, ASL. Students confer about assignments and group projects using real-time video conferencing software.

Incidental learning: GSD takes full advantage of common spaces to provide students with what Superintendent Jackson calls "incidental learning," where students consume educational content while engaging in other activities. Video displays in common spaces such as hallways and the cafeteria are used to improve student vocabulary through "living word walls"— videos designed to improve vocabulary by introducing new words in both ASL and English. These videos are on a constant loop and are refreshed frequently.

Displays are also used to post storytelling videos in ASL. Storytelling videos increase students' exposure to correct language in ASL, as well as build overall literacy skills. Superintendent Jackson noted, "If language is everywhere in their world, not just in the classroom, it is more powerful."



Loren Frick, a middle school math teacher at GSD, frequently collaborates with students to create videos that illustrate math concepts through real-world vignettes. This video focuses on proportions in the context of plans to cut down a large tree (https://www.youtube.com/watch?v=73GxxNLJPv8).

"Deaf students can't take notes during a lesson—you can't watch the teacher and take notes at the same time. So the flipped classroom model where the teachers video themselves teaching gives [students] instant access back to the classroom...We really want the opportunity for the kids to not have to hold everything in their head."

– Superintendent Leslie Jackson

Impact

Students, teachers, and administrators described many ways in which increased access to high-quality video has positively transformed teaching and learning at GSD.

There are fewer interruptions during instructional time: With the upgraded network, classes are able to use video without any delay as they would have used any other materials. GSD staff described the loss of important class time while waiting for video or other content to load prior to the upgrade. Paul Saunders, a high school social studies teacher, explained "all of that video requires a lot of bandwidth. Before we would lose 10–15 minutes per class just waiting on video to upload. But with the improvements…there's no interruption to instructional time…We have [the time] back to help the students rather than waiting for the technology to catch up. So now more content can to be taught through the increased bandwidth."

Students have access to expanded curricular content: Students have broader access to video content posted by their teachers, and it is more generally available through the increased connectivity. Students have greater access to high-quality materials in both ASL and English, which reinforces their learning.

Students are more accountable and take greater ownership of their learning: With broader access to content and supports, faculty noted that GSD students have become more accountable for their learning. The ability to start and stop lessons, and scaffold as needed, allows students to learn at their own pace. Students' dependence on their teachers has decreased, and the number of times students access resources in online course folders has increased significantly.

Students' skills have increased: Teachers and administrators at GSD reported that students' skills in all subject areas, including reading, writing, and ASL communication have increased as a result of the expanded video supports. Technology provides an important tool for reinforcement and self-paced learning. Further, students' ability to record and share their own videos allows them to demonstrate mastery in new and innovative ways and provides teachers with additional opportunities to provide feedback on student performance.