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Technical Colleges on the Cutting Edge: Implementing New Technologies at HGTC Library

Abstract

The integration of new technologies on college campuses is an imperative to enhance learning and prepare students for career success. This article describes the implementation of new technology at a technical college library. Thanks to a multi-layered grant from The Chapin Foundation HGTC Library was able to install a video wall, 10 zSpace machines, and a PolyCom system all in the same space located inside the library. Uses of this equipment in other settings as well as at HGTC are considered.

Keywords

technology, libraries, videoconferencing, zspace, video wall, visulization lab

Background

Horry-Georgetown Technical College (HGTC) was founded in 1966. Today this public, two-year technical college offers over 65 associate degree, diploma, and certificate programs, as well as continuing education programs and training and special interest classes. According to the college web site, “HGTC is the fourth-largest of the 16 South Carolina technical colleges and is one of the fastest-growing higher education institutions in the state” (Horry-Georgetown Technical College, 2019, para. 5). HGTC offers three campus locations in Myrtle Beach, Conway, and Georgetown.

The Grand Strand Campus in Myrtle Beach is located in the idyllic Market Common on the old Myrtle Beach Air Force Base. Some of the programs unique to the Grand Strand campus are Baking and Pastry Arts, Cake Decorating, Culinary Arts Technology, Dental Hygiene, Diagnostic Medical Sonography, Emergency Medical Technology, EMT-Basic, EMT-Paramedic, Esthetics Technician, Paralegal, Phlebotomy, Physical Therapist Assistant, Radiologic Technology, Respiratory Care, and Sports Tourism and Recreation Management. Many of these programs benefit from creative new approaches to learning.

Each of HGTC’s three campuses has a library for students, staff, faculty, and community users. Being located in the middle of a residential community, the Grand Strand Campus Library sees the greatest number of community users. It also has benefitted throughout the years by being the recipient of grants from The Chapin Foundation. The Chapin Foundation supports and provides grants in four areas to include The Chapin Memorial Library and school libraries located within the city limits of Myrtle Beach or within a one-mile radius (The Chapin Foundation, 2019). In 2016, The Chapin Foundation opened up a library technology grant. HGTC Library conducted a faculty/staff survey to collect input from the HGTC community as to what technology the library could add that would benefit the students, and in particular, the students at the Myrtle Beach campus. The survey results showed interest in adding a video wall. Once approved by HGTC administration, the library applied for and received a technology

grant for a 10'x6' 4K UHD, interactive, touchscreen video wall with split/multi-screen capabilities and a dedicated laptop for the wall. The grant also provided for limited technical support.

Figure 1

Photo of Video Wall

In the fall of 2017, the library then applied for and received a second technology grant from The Chapin Foundation. This second grant upgraded the video wall and the computer used to activate the wall. It also provided for a Polycom system to enable intercampus conferencing technologies with live video feed and for ten zSpace machines, which combine elements of augmented and virtual reality (AR/VR) to “create lifelike experiences that are immersive and interactive” (zSpace, 2019, para. 1). New, flexible furniture, desks and chairs on wheels, were also added to allow better collaborative learning in workgroups. On December 13, 2018, HGTC held a dedication for the newly christened “Chapin Center for Collaborative Learning.”

Video Wall

Libraries have begun using video walls and visualization labs for a variety of purposes. One example of the use of a video wall by a public library is at Central Library in downtown Los Angeles. That wall is used, among other things, to tell the story of the community and of the library on an ongoing basis. The 28-foot wall is a centerpiece of their digital commons space (Vantage Technology Consulting Group, 2018). Some university libraries such as NC State's James B. Hunt Jr. Library have multiple walls serving a variety of purposes. For example, they have an art wall, a wall for "immersion theater," a commons wall, and a visualization wall (NC State University Libraries, 2019). The commons wall, highlighting library programming, is similar to the video walls located at the University of North Carolina at Charlotte's J. Murrey Atkins Library which highlight programs and services. Indiana University, likewise, employs 16 video walls throughout campus for similar reasons. According to Chris Eller, principal project analyst at University IT Services for Indiana University, "The walls can serve multiple purposes... branding campaigns, campus news and event calendars, wayfinding, advertising and emergency notification systems" (Hennick, 2018, para. 7). The latter mentioned wall at NC State focused on visualization is closer to the use of the technology at HGTC. That is, the video wall is used primarily for teaching as opposed to marketing or other purposes.

The library and HGTC use the video wall to create a dynamic learning process whereby the student experience is shifted away from traditional lectures into a more integrated learning process. Library faculty and staff conduct workshops, orientations, and bibliographic instruction using the video wall for HGTC's Health Science, Humanities, and other programs.

The wall and associated technology mentioned below also serve to some extent as a recruiting tool. Today's college students play advanced video games, view high-resolution videos, and interact with feature-rich smartphones. Institutions with advanced technology are often more attractive to them.

HGTC's video wall can trigger the wow factor for individuals who may be on the fence as to where they will enroll.

Students and faculty at HGTC have used the video wall in a variety of ways beyond library instruction. The Sports Tourism and Recreation Management faculty bring in current students each semester to see and use this interactive big screen. They also conduct orientations for future students in The Chapin Center for Collaborative Learning to show off the technology and its capabilities. The Culinary and Astronomy faculty, likewise, have expressed appreciation for the video wall's large screen for use with their students. According to Domenick Cuccherini, a member of the OIT support staff at HGTC, history professors have also conducted demos of museums, a variety of instructors have used the space to hold study sessions, and nursing students have used the space in groups to study, utilizing the wall to review visual information. One of the more creative uses was by a faculty member in turf grass management who used Google Earth and other electronic resources to allow students to explore golf courses in great detail. It is hoped that with the addition of the other technologies mentioned below use of the space will continue to rise.

If you are interested in implementing a video wall, EDUCAUSE provides a freely available, short document entitled *7 Things You Should Know About Video Walls*. These "things" include how they work, how they are being used, what are the potential downsides, and what implications exist for teaching and learning (Sinclair, 2017).

zSpace Machines

zSpace machines, developed by a company of the same name out of Sunnyvale, California, have caught on in K-12 schools and, more recently, in higher education as well. To mention just one example, "In a biology demonstration at Egan Junior High School, a middle school in the Los Altos school district (the first district to pilot zSpace for schools), students see a beating heart in virtual reality. They can pick

it up, rotate it with the stylus, and peel back layers so they can see how the heart looks inside as it beats. They can stick a miniature camera into the heart to see parts of it close-up” (Lien, 2015, para. 4). A good basic description and explanation of zSpace technology alongside a short video interview with zSpace CEO Paul Kellenberger can be found in Forbes magazine. As described there, through the utilization of special glasses and a hand held stylus, users are able to work with objects in full 3D (Geron, 2013).

At HGTC our initial focus has been on exposing as many faculty and staff as possible to this new technology. In February and March of 2019 a number of training sessions, some lengthy and some brief, were provided to IT, library staff, tutors, faculty, and new staff and faculty in particular (as part of their onboarding process). The initial target for this technology, however, is to support the many allied health programs at HGTC such as Dental Hygiene, Diagnostic Medical Sonography, Emergency Medical Technology, Nursing, Patient Care Medical Assisting, Radiologic Technology, and Respiratory Care. Stanbridge College in California is one college that has found success in attaching this technology to teaching in allied health programs such as nursing and occupational and physical therapy (Kelly, 2016). One practical impediment that exists at HGTC’s Myrtle Beach campus is the distance between the building where allied health is generally taught and the library, which is a few blocks away. It is hoped that the advantages of the technology and an easy room booking system can overcome this challenge so that faculty may use the space and technology to advance student understanding of concepts associated with, for example, anatomy and physiology.

Polycom System

The final phase of technology integration in the project described here included the addition of a sophisticated Polycom system in the same space as the video wall and zSpace machines. Utilizing accessories such as EagleEye cameras and a strategically placed array of microphones, the room itself has been converted into an innovative videoconferencing space available to be reserved by students and

faculty. The potential uses are almost endless, but some of the earliest applications of the technology focused on sharing instructors across distances and connecting multiple classrooms across the globe (Waters, 2008). The resurgence in the use of videoconferencing as a response to MOOCs is one example. There is also, hand in hand, a realization that the newer versions of videoconferencing are increasingly powerful. In 2012, for example, Cornell University, Yale, and Columbia University dedicated over one million dollars towards providing video-conferenced classes in a number of uncommonly used languages (Tilsley, 2012). Another application that seems popular is for students to access and interact with peers across the globe. For example, students can be asked to provide group presentations using this system to other groups of students at other institutions far and wide. Examples of this type of application date as far back as 1996 (Huber, 1996). With advances that have been made in the Internet and other technologies, a new, modern Polycom system can provide this opportunity with much greater reliability.

Lastly, a major goal at HGTC is to be able to connect students to leading experts around the world. The ability to interact with experts across distances will give them a richer experience than one limited by local resources.

It should be noted that there are significant challenges and limitations even beyond initial funding. According to one report, "All the teachers in the study talked about the challenges of using their prevailing teaching methods with the new technology...The technology itself will not make distance education courses good, nor close the psychological distance felt by participants" (Rehn et al., 2016, p. 314). In other words, it requires teachers to adapt and change their style based on the medium. On a positive note, that same study concluded, "While connecting distance education students to real teachers who can explain concepts through lecture is one of those affordances, the technology also lends itself to more interaction in the form of teacher feedback and peer collaboration...." (Rehn et al., 2016, p. 314).

Beyond the use of the Polycom system for teaching and learning, many schools have lauded the possibility of video conferencing to replace at least some business travel. This function is not new and can be found referenced in the literature at the early part of the 21st century and earlier. For example, one article highlighting the possibilities of “the future” mentioned a collaboration between the Fountain Valley School District and Sacramento, over 400 miles away (“The 21st Century,” 2016). This new space has also become popular already at HGTC for Human Resource trainings for the college, HGTC Foundation meetings, and many other meetings at the Myrtle Beach campus where previously the Conference Room or Conference Center were used. It is expected that the new Polycom system will enhance and increase such usage moving forward.

The Future

HGTC is excited to have this new technology and for the possibilities it brings to growing the college. Technical colleges need to continue to adapt and train students in the use of new technologies. In the future this may include drones and innumerable other devices, programs, and products. It is important that these be added in a manner consistent with the programs taught at those institutions and that the focus be on improved student learning outcomes. Utilizing technology for its own sake matters less than preparing students well for successful entry into their chosen field.

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