IMPORTANT EVENTS IN THE HISTORY OF DIGITAL HIGHER EDUCATION

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INTRODUCTION

When I was taking Creative Writing back in my college days, I remember telling my professor that I had difficulty finding inspiration for writing projects, especially those of a creative bent. I could never go looking for inspiration; if I did, it eluded me every time. Instead I had to wait for it to hit me over the head, and eventually it always did, often like a lightning bolt!

In much the same way, I stumbled upon an idea for a blog series one day. Our team at the Digital Higher Education Consortium of Texas (DigiTex) was seeking to increase our blog activity, and all hands had been called to deck. For weeks I thought about how I might contribute as well, with nothing coming to mind, as usual. Then one day it hit me: what better topic to address than the history of digital higher education! For a consortium that was founded on the mission of providing digital course sharing access to students at community colleges across the state of Texas, this seemed like a logical choice. Thus, the series *Important Events in the History of Digital Higher Education* was born.

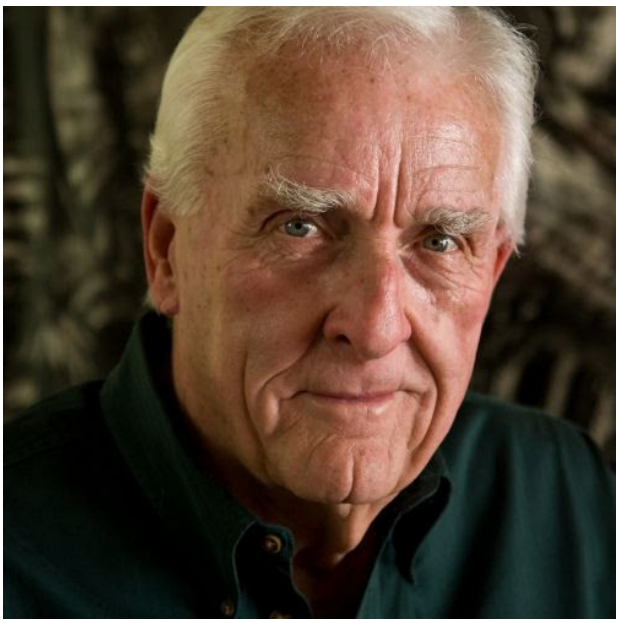
From there, it wasn't difficult to select the topics for the individual posts in the series. While there are any number of important moments from the history of digital higher education, there were several pivotal points that truly shaped digital higher education as we know it. The following pages will give a tour of these moments. I hope you enjoy the trip down memory lane!

ACKNOWLEDGEMENTS

Many thanks to Judith Sebesta, Executive Director of DigiTex, and Ursula Pike, Associate Director of DigiTex, for their assistance with editing and content suggestions for these posts, and for encouraging me to write this series in the first place and compile the results. I wouldn't have done it without you!

THE WBSI ADVENTURE IN "ONLINE" EDUCATION

What elements comprise the digital learning experience? For most of us, the answer would include a learning management system such as Blackboard, Canvas, or Moodle; videos, podcasts, and other media; discussion rooms; and electronically submitted assignments, among other components. Now imagine attempting to conduct an online class without any of this "essential" technology! At a time when there were no learning management systems and the internet as we know it was still gestating, the Western Behavioral Sciences Institute blazed the trail for digital education with its online School of Management and Strategic Studies.



President Richard Farson

The Western Behavioral Sciences Institute (WBSI) was founded in 1958 in La Jolla, California, through a joint effort between Richard Farson, Wayman Crow, and Paul Lloyd. The institute was originally formed to foster a deeper understanding of human relationships through research into the human mind (Feenberg, 1993). A few years after its founding, the influential psychologist Carl Rogers, father of the person-centered method of counseling, joined the staff. During his tenure, the institute focused on the use of encounter groups to study human interactions (Farson, 2005). However, by 1981, WBSI was retooling its focus somewhat and exploring new outreach methods.

Under the leadership of President Richard Farson, planning for the WBSI School of Management and Strategic Studies began in late 1981. The School's target audience included upper level executives who needed a remote delivery method so that they could both attend classes and manage their businesses as usual. The program originally was designed as a two-year course, divided into four six-month sessions. During the first week of each session, the executives would all gather for face-to-face training sessions at the campus in La Jolla. At this time, they had the chance to meet their instructors and learn how to use the computers for their classes. Students in the program were privileged to learn from highly qualified instructors hailing from such respected institutions as Yale, Harvard, and the University of California (Feenberg, 1993).

The program held its first week-long orientation in January of 1982, "with a stellar group of eight participants, including a Los Angeles City Councilman, a director of the Venezualan [sic] national oil company, the presidents of several small high tech companies, and vice-presidents from some larger mainline firms" (Feenberg, 1993). Following this introductory week, the participants returned home to the challenge of continuing their studies using computers. In a period when computers were notably larger, much slower, and lacking in much of the technology which we find indispensable today, this was no easy task. Instructions for operating the computers and logging on to the EIES network at the New Jersey Institute of Technology were lengthy and often challenging to execute. Lectures often were one-sided, and attempts by the professors to generate discussion with questions often fell flat due to technological challenges or participant reluctance to voice opinions in an online format (Feenberg, 1993).

An HP9835A, one of the computers that was still in use at the time that the WBSI began its School of Management and Strategic Studies (HP Computer Museum Staff)

Nevertheless, in spite of the challenges, the program grew to include "over 150 participants from 26 countries" (Feenberg, 1993). Almost all participants in the program spoke very highly of their experiences, and Andrew Feenberg, who worked at the WBSI and was deeply involved with the School of Management and Strategic Studies, stated that the participants felt as if they were a part of a strong community, often maintaining their contacts with each other even after they completed the program (1993). Sadly, in spite of its many successes, WBSI struggled financially over the years and was eventually forced to close in 1991, although it did later enjoy a renaissance in the 2000s (Farson, 2005).

The legacy of the Western Behavioral Sciences Institute is an important one. With its high-quality instructors and content and its global networking opportunities, the online School of Management set a standard for all online programs that would follow. The program proved that it was possible to make a success of online instruction, not only locally, but also *internationally*. Additionally, it was forced to address some very important pedagogical issues as they arose (Feenberg, 1993). For instance, how does an instructor "lecture" effectively through a computer with limited connectivity and only manual input options? How can students become engaged in classes when no one can see each other and communication is often unidirectional? And finally, how can a community be

created among students when everyone is scattered across the globe? Of course, all online instructors must address the important subjects of content presentation, student engagement, and online community-building even today, but imagine the difficulty of doing so for the *first* online program, without the aid of an LMS or a fully developed internet! (Full disclosure: Yes, I actually used an 80s IBM. How many of you remember the fun of MS-DOS?)

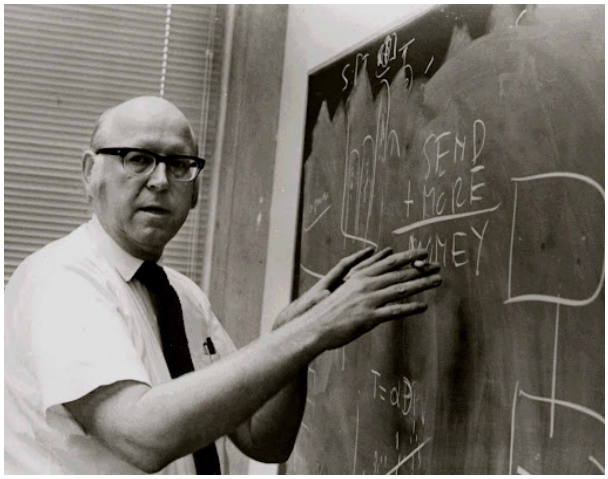
1150 Silverado St., La Jolla, CA

At the time of this writing, the location of the Western Behavioral Sciences Institute is still listed at 1150 Silverado St. in La Jolla, CA. They are said to be operating out of a professional office building (left). It is unclear, however, whether the WBSI is still active, as their website (www.wbsi.org) is currently up for sale, and there is no available contact information. Regardless of its status, however, the WBSI will continue to be an important early influence in the history of digital education.

THE ANDREW PROJECT AT CARNEGIE MELLON UNIVERSITY

In the 1970s the United States Department of Defense launched ARPANET, a network that connected government agencies and universities to allow for electronic messaging (e-mails) and file sharing (Carnegie Mellon, 2007c). This initiative was, essentially, an internet before there was an internet. Groundbreaking though it was, the communication potential that was exhibited by ARPANET was constrained by the prohibitive expense of computers as well as their relatively limited functionality at the time. It wasn't until October 1981, when President Richard Cyert of Carnegie Mellon University created a project task force to study the future of computing at the university, that networked computing began to enter a new phase.

Professor Allen Newell of the Carnegie Mellon Computer Science department chaired the Task Force for the Future of Computing, and under his leadership, the group was able to make its recommendation within four months: to create "an organization to develop and refine a prototype computing environment for academic use" (Carnegie Mellon, 2007d). Following on the recommendation of the task force, in October 1982 Carnegie Mellon teamed up with IBM to create the Information Technology Center (ITC), an organization that would be tasked with creating an integrated computing environment for the university (Carnegie Mellon, 2007d). A large grant from IBM funded not only the ITC but also provided equipment, a research and development center, and thirty of IBM's computer scientists and engineers to assist with the project (Arms, 2014).



Professor Allen Newell, Photo by Ben Shneiderman

The ITC's vision for Carnegie Mellon's computing future included two key requirements. Firstly, the new computing environment must serve faculty, staff, and students -- beginners and experts alike -- using a system that combined the best features of personal computing and time-sharing technology. Secondly, it must be founded upon a reliable network and allow for "networked information storage, multiple-application processing, and growth capability" (Carnegie Mellon, 2007d). To make this future a reality, both a data communications network and a software system that allowed campus-wide access to files and printers would be needed. With these goals in mind, the ITC embarked upon its five-year Andrew Project, named after the two founders of Carnegie Mellon University, Andrew Carnegie and Andrew Mellon (Carnegie Mellon, 2007a).

Not surprisingly, financial considerations played a key role in the execution of the Andrew Project. In 1983, computers cost roughly $3,000 per workstation, so it would not have been feasible to ask CMU's 7,000 students to purchase their own computers. Therefore, the university opted to design cluster facilities with multiple computers at each workstation. In total, the initial network comprised 600 computers and would grow as the Project expanded (Carnegie Mellon, 2007c).

At the time of the Project, Carnegie Mellon had an existing ethernet structure in place, and this structure was used as the foundation of the new university intranet and augmented by wiring technology from IBM. Standard internet protocols were adopted (a revolutionary approach at the time), and Unix was chosen as the standard operating system for all computers. Although this was a controversial choice, the Unix system was widely used for research among institutions of higher education in the 1980s (Carnegie Mellon, 2007c) and was, therefore, a logical choice.

By 1987, the Andrew Project was up and running and consisted of three primary components. *Andrew Message System* provided both e-mail and a bulletin board system. As an e-mail client it was quite advanced for its time and supported a number of features that we see as standard today including sorting, read vs. unread messages, predictive addresses in the "To" line, attachments, date and time stamps, and so forth. As a bulletin board system it provided students, faculty, and staff with on-demand access to important announcements from the university. *Andrew Toolkit*, which was first known as VIRTUE (Virtue is Reached Through Unix and Emacs), was the interface that allowed users to "edit multi-media components such as fonts, graphics, spreadsheets, or sound." *Andrew File System*, which was first known as VICE (Vast Integrated Computing Environment), allowed users to share files safely and effectively throughout the CMU computing environment (Carnegie Mellon, 2007e). In addition, Andrew File System controlled the "underlying network, authentication servers, and related campus-wide infrastructure" (Carnegie Mellon, 2007c).

The completed Andrew Project was a powerful system that provided users with the ability to "exchange electronic mail and messages, call up campus bulletin-board notices, receive and complete course assignments, compose research papers, retrieve database information from files, libraries, and campus directories, and receive instruction in university courses" (Technology News, 1987). As if these achievements were not enough, the Andrew Project continued to grow and develop over the next five years until finally Andrew went wireless. In 1992 with Wireless Andrew, Carnegie Mellon became the first campus in the world to provide its faculty, staff, and students with the ability to access all of the resources of Andrew using laptops and personal digital assistants rather than computers that were hard-wired to the network (Carnegie Mellon, 2007b).

It would be difficult to overstate the importance of the Andrew Project in the history of digital higher education. President Cyert himself called it "perhaps the most significant development in higher education in the twentieth century" (Carnegie Mellon, 2007a). As the first of its kind, the Andrew Project paved the way for networked computing as we know it. The team of the Information Technology Center at Carnegie Mellon truly made history and pioneered the future!

MIT'S PROJECT ATHENA & INTEGRATED COMPUTING

"Massachusetts Institute of Technology - Building 10 and Dome (1975)" by Roger W is licensed CC BY-SA 2.0.

Imagine a college classroom stripped of technology: no instructor or student computers, no projector, no PowerPoint slides for lectures, no Blackboard or Canvas for the dissemination of assignments and tracking of grades. Pretty difficult, isn't it? In the 25+ years since technology started to become a fixture in the classroom, we've grown so accustomed to having it with us that it would be difficult to imagine teaching without it. For most of us, all of our technological aids just make teaching so much easier and offer such a wide range of options to reach our students! However, those who were teaching in the early 1980s might remember a time of tremendous growth in the world of computing, prior to the advent of computers in the classroom. Universities were just beginning to recognize the tremendous academic potential of computers, which had previously been associated primarily with mathematical computations. This technological awakening spawned a number of pivotal computing projects which would shape the future of academic computing for many years to come. In a previous post we looked at the Andrew Project at Carnegie Mellon University, which created the first networked computing environment at a university. Equally important was the impressive Project Athena at the Massachusetts Institute of Technology (MIT), which produced the first distributed computing environment at a university and integrated computing into the school's curriculum.

Before beginning its program, MIT previously had approached several vendors with requests for funding in 1982. Perhaps due to a growing interest in bringing computing to college campuses, MIT received many more bids for sponsorship than it had anticipated. After vetting the candidates, the university ultimately opted for a dual partnership with IBM, then also working with Carnegie Mellon University on the Andrew Project, and with Digital Equipment Corporation (DEC), who previously had bid for sponsorship of the Andrew Project and lost to IBM (Champine, 1991).

In May 1983, MIT formally announced Project Athena, a five-year program whose mission was to integrate computing into the curriculum at MIT. The name itself was suggested by the wife of MIT professor Chris Chrysostomidis, after Athena, the Greek goddess of wisdom. By June of that same year, the Coherence/Technical Committee had been established. To facilitate the smooth

Statue of the goddess Athena

development of the project, the Committee made several key decisions at the outset that would substantially shape the project. Firstly, they determined that the project should be coherent. While this is a packed word that can involve many different factors, it largely indicated a goal of providing a stable computing system that would consistently meet the needs of faculty, staff, and students. To achieve this goal, the Committee decided to implement a uniform software system across the campus computing environment using Unix, Emacs, Scribe, C, FORTRAN, and LISP (Champine, 1991).

The Committee next determined that the hardware and software used by Athena should be selected with an eye to their growth potential. Thus, more complex systems and softwares were employed over simpler options (Unix over DOS, C over Basic, workstations over PCs, etc.). Additionally, to protect the coherence of the project, it was decided that Athena would manage the system, rather than handing control of the various computer workstations to the different departments at MIT. Finally, the system initially would be available only to undergraduate students, as graduate students already had greater access to computing systems than undergraduates (and, therefore, less of a need for the Athena system at the time). Once the Athena system was built out with a larger number of workstations, then usage would be extended to graduate students and researchers (Champine, 1991).

The first phase of implementation, which spanned the years 1983-1985, involved deploying a smaller time-sharing system. The idea was to get some computing technology into the hands of faculty and students as quickly as possible. The early deployment of this system also allowed users to adjust to the Unix operating system and bought time for project developers to create the infrastructure that would be needed to support the newer workstation system. Not surprisingly, the facilitators drew inspiration from the project's name and chose to continue the use of names taken from Greek mythology, naming some of the time-sharing systems Zeus, Charon, Agamemnon, and Theseus (Champine, 1991).

During the critical first five years of the Project, funding was available to faculty members who wanted to propose educational software for the new system so that they could integrate the new computing technology into their courses. Faculty members would develop the teaching and learning methods and describe the functionality that they were looking for, and then a team, often composed of students, would do the programming of the software. A total of 125 projects were

funded, with grants ranging from $5,000 to $1 million. Of these projects, "about one third resulted in software that is used regularly in courses, about one third resulted in nothing useful, and the rest fell somewhere in between." Most requests for funding came from engineering faculty, but there were also many requests from faculty in other disciplines including Architecture, the Humanities and Social Sciences, and the Sciences (Champine, 1991). Of particular note was the Athena Writing Project, proposed by Professors James Paradis and Ed Barrett. Their goal was to create an online environment for the teaching of scientific writing. Once finished, their system allowed students to submit assignments, present to the class, and revise writing projects (Charles and Frederick, 2018).

As it got off the ground, progress on Project Athena began to pick up. The years 1985-1988 saw the installation of the workstation system, which had been the ultimate goal of the project from the start. Beginning in 1988 and onward, the program focused on improvement in the reliability and stability of the system, with the addition of more workstations throughout campus (Champine, 1991). Everyone was engaged in the project, including the students, who occasionally had some fun with the Athena system. In a more notable incident, during finals week in the Fall semester of 1989, a group of students hacked into over 200 computers, replacing the traditional Athena owl on the logon screen with a grumpy fuzzball. The students enjoyed the replacement and noted that "the fuzzball resembled a burned-out owl and thought it was a fitting revision for the final week of classes." As Athena staffers scrambled to find the code responsible for the hack, it was determined that the hack was harmless, and it was allowed to continue.

A grumpy fuzzball stand-in

Indeed, the logon screens reverted to the original owl less than twenty-four hours later. However, this incident remains as one of the more charming and humorous stories from the project (Grumpy Fuzzball, n.d.).

While Project Athena formally ended in 1991, it created ripples in the computing world that would be felt for many years to come. One outgrowth of the program was the X Windows system which is now commonly used in the Unix operating system. This system allows users to keep multiple windows open, in which they may perform multiple unrelated tasks, in much the same way that a web browser allows a user to visit multiple unrelated web pages simultaneously through different tabs. Another important development from the project was the Kerberos authentication system, which is named

after the three-headed dog which guards the Underworld" in Greek mythology (Charles and Frederick, 2018) and is still widely used at various institutions today.

Even more impressive is the brainchild of Drew Houston, a 2005 graduate of MIT. After enjoying the advantages of the Athena system as a student at the university, Drew found that he missed the convenience of being able to take his work environment and files with him everywhere. Noticing that there really wasn't an equivalent to Athena at the time, he developed the Dropbox cloud file storage program as a way of replicating the Athena experience for users outside of MIT. This service, which launched in 2008, was among the earliest cloud computing applications and is still in use today (Charles and Frederick, 2018).

As was the Andrew Project at Carnegie Mellon University, Project Athena was a defining venture in the history of digital higher education which has forever shaped academic computing. As the first distributed computing environment, the project introduced many of the concepts and functions which we now think of as indispensable and paved the way for today's cloud computing. It also made MIT one of the first universities to fully integrate computing technology into a curriculum. It's not a stretch to say that pedagogy as we know it today would probably have looked very different, were it not for Project Athena.

COURSE SHARING THROUGH MIND EXTENSION UNIVERSITY

In 1998, the Virtual College of Texas (VCT) was established to facilitate digital course sharing in the state of Texas, with the goal of allowing students across the state to access the courses that they needed to complete their educations. Today as the Digital Higher Education Consortium of Texas, DigiTex continues to fulfill that original mission, while also promoting a number of other initiatives to benefit our institutions and their students. DigiTex was not the first course sharing endeavor, however. Over ten years prior to the inception of VCT/DigiTex, Glenn Jones had created a prototype of the course sharing consortium: Mind Extension University.

When Mind Extension University (ME/U) was first founded in November 1987 as a basic cable television channel, its mission was to serve its students by providing primarily college-level courses to help students graduate from high school, improve their personal skills, or complete an associate, bachelor, or master's degree program. To achieve this aim, ME/U partnered with various respected universities to offer high-quality, accredited telecourses. In selecting its affiliated institutions, ME/U followed a set of strict protocols. Instructors at the respective institutions had to be highly competent, with previous experience in teaching telecourses. Their courses had to be of a high quality, and the administration at their institutions had to be open-minded and supportive of digital learning (Jones, 1990).

To participate in the courses, students would first enroll at the "partner university" of their choice and then complete telecourses through that university and other institutions that participated in ME/U (Gorski, 1994). Students would most commonly tape course instructional periods using a home VCR and VHS tapes and then replay them later on their own time. (For a little bit of nostalgia, see right. Who remembers VHS tapes and that famous Blockbuster slogan, "Be kind, rewind!"?) This allowed them to enjoy greater flexibility in their busy schedules and rewatch instructional segments for greater understanding. Any students who missed a lesson could call the ME/U Student Support Center to receive a tape of the session. Just like traditional courses, the telecourses at ME/U required standard textbooks, assignments, and exams (Jones, 1990). In the beginning, students had to either fax or mail their assignments to their instructors at the respective institutions in which they were enrolled. Later on, with the development of ME/U's Bulletin Board System (BBS) in 1991, students also had the option of e-mailing their assignments, as well as chatting with their instructors and completing exams in a virtual classroom environment (Gorski, 1994).

By 1990, ME/U had a total of 14 participating colleges and universities, with more projected to come on board. Participating schools included Pennsylvania State University, the University of South

Carolina, Colorado State University, Georgetown University, California State University, and the University of Maryland, among many others. Through these schools, ME/U was able to offer bachelor's degrees in management, nursing, animal sciences and industry, business and administration, and social sciences. It also offered two master's degrees in education and human development and library science. For those who were not seeking a degree, ME/U offered shorter, non-credit courses in computer literacy; personal finance; mathematics; English; and French, German, and Spanish (Gorski, 1994; Jones, 1990).

Mind Extension University achieved its pinnacle of success in the 1990s, at which time it was reaching "26 million households in more than 8,500 communities" (Gorski, 1994). By the late 1990s, its name had changed to Knowledge TV, and viewership was starting to decrease. Then in 1999, Knowledge TV was formally purchased by Discovery Communications Inc. In 2000, the network closed, as Discovery was planning to "convert [the channel's] distribution to Discovery Health" (Moss, 2000).

Although Mind Extension University is now a part of history, its legacy lives on. Founder Glenn Jones, who was passionate about ensuring educational access for everyone, demonstrated the power of digital learning to accomplish this goal and paved the way for consortia such as DigiTex to provide learning to all. Mr. Jones followed a vision and, in so doing, offered opportunities to thousands of students whose lives might have been quite different, were it not for Mind Extension University.

CALCAMPUS, SYNCHRONOUS LEARNING, & EARLY USE OF "OER"

Around the same time that Project Athena and the Andrew Project were first getting off the ground, a woman named Margaret Morabito was dreaming of an affordable, consumer-oriented approach to education that incorporated the use of computers to reach non-traditional students (Morabito, 1986). Having worked previously as an English professor, director of a United States Army computer

center, and instructor of English in the Navy (Millman, 1988), Morabito had much experience to draw on when she founded the Computer Assisted Learning Center (CALC) in Rindge, New Hampshire, in 1982. Initially CALC was an offline tutoring center for adults. However, Morabito had much bigger plans for her new center.

Beginning in 1983, Morabito started researching the ways in which telecommunications were being used to facilitate education, and as a result of her research she began to see the potential of computers to serve as instructional aids. Following this realization, she developed a plan to reinvent CALC "as an exclusively online learning center for the purpose of providing instruction to individual learners from diverse locations through the use of computer telecommunications" (Morabito, 2020). The Learning Center continued to operate as a small offline facility for several more years. Then in 1985, the QuantumLink telecommunications network opened, offering the chance to take CALC online. Morabito presented a proposal for her new online Learning Center, and in 1986 the CALC Tutoring Center first opened "on the QuantumLink network inside the Q-Link Learning Center" (Morabito, 2020). Not long after the Tutoring Center became a reality, Morabito's brainchild grew again to include QuantumLink Community College, which provided instruction in non-credit courses through live groups (what we would, today, call synchronous learning).

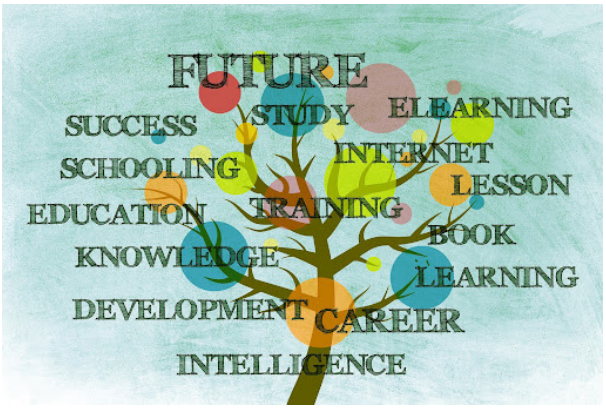
The instructors, known as QTutors, would hold hour-long sessions in virtual "classrooms," providing both lesson content and question and answer sessions for their students. Between class times, message boards were provided for each department of study. In the event that they missed an instructional session or simply thought of a question for the instructor, students could use these message boards to contact their teachers for clarification. Among the subjects taught were English, mythology, mathematics, BASIC programming, and science (Morabito, 1986; Millman, 1988).

Today's instructors who adopt Open Educational Resources (OER) for their classes will be impressed by the resourcefulness of Morabito and her team in providing texts for these classes. Since the students of CALC came from all walks of life, some arrived for tutoring with their own textbooks as references, while others did not. Of course, providing textbooks for those without them was a challenge, but the instructors at CALC overcame this hurdle by providing free resources to their students. According to Morabito, public domain materials were both created by the instructors at CALC and donated by other instructors who did not work at CALC but supported online education nonetheless. These materials were then loaded to the departmental databases, where students

were free to download them as needed (1986). In other words, the tutors were using openly licensed resources before the term "Open Educational Resources" had even been coined!

From 1986 through 1995, CALC continued to grow its operations to include service on multiple communications channels including AppleLink, PC-Link, Delphi, AOL, GEnie, and CompuServe. By 1995 the internet was becoming much more widely available to the general public through smaller, local internet providers. With widely available internet, CALC had the means to reach a much broader audience. Although Morabito continued to operate the separate campuses on the various communications channels, CALC also went officially online as we would understand it today. With its new internet campus came an official domain: calcampus.com. Of course the new domain necessitated a name change, and so in 1995 CALC Online Campus became CALCampus (Morabito, 2020).

As of 2007, CALCampus has been fully accredited (Morabito, 2020) and is currently subdivided into the High School and Postsecondary divisions. Both divisions are accredited by the Northwest Accreditation Commission (NWAC), the North Central Association Commission on Accreditation and School Improvement (NCA CASI), and the Southern Association of Colleges and Schools Commission on Accreditation and School Improvement (SACS CASI). Students in the High School division may take courses toward the completion of their high school diplomas, while students in the Postsecondary division may take courses for college credit. CALCampus has chosen not to offer financial aid nor receive Title IV funding, so it also does not grant degrees. However, students who complete one of the institution's programs may receive a certificate of completion. They may also request official transcripts with full records of courses completed and grades earned (CALCampus, 2020).



Based upon her own research, Morabito claims that CALCampus is the first distance education model to offer "a totally online-based school through which administration, real-time classroom instruction, and materials were provided" (Morabito, 2020). CALCampus was truly a revolution in the field of distance education. No longer did the term "distance learning" mean self-led study sessions and complete isolation from the instructor and students. Additionally, instructor use of what we would call Open Educational Resources set an early example for those who would follow. In a testament to the strength and ingenuity of its founder, Margaret Morabito, and to her vision, CALCampus is still operational today and is reaching students around the world (Morabito, 2020).

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