Virtual Schools: Benefits and Barriers in Rural Texas Schools

http://www.arpisd.org/ACCESS.htm

BENEFITS

- **Freedom of Flexible Scheduling to suit each learner's lifestyle**
- **Learn Anytime, Anywhere (depending on access)**
- **Acceleration and Early Graduation**
- **Improve Completion Rates**
- **Meet Graduation Requirements**
- **Take Advantage of Extended Learning & Summer Sessions**
- **Review and Remediate as often as needed**
- **One-on-One Accessibility to teachers (depending on responsiveness)**
- **Personalized and Prescriptive TEKS-based Tutoring (depending on provider)**
- **College & Career Readiness**
- **Dual Credit and Capstone Classes**
- **Gain 21st Century Research, Technology & Global Literacy Skills**
- **Develop Personal Skills in Communication, Collaboration, Productivity, and Time & Resource Management**

EXISTING SUPPORT

- **TxVSN** is modeling research-based best practices in many areas by enlisting a heterogeneous advisory committee to address barriers to virtual learning. As a result they provide invaluable services including: (1) helping potential online teachers gain Web Instructor Certifications (2) training onsite facilitators, counselors and (3) preparing potential students for the rigors of an online course.
- **ePlan & STAR Charts:** Requiring LEAs to create a comprehensive technology plan helps to create a clearer vision for continuous improvement by being responsive to the district.
  - ENCOURAGE LEAs to collect surveys from all their stakeholders as part of their improvement cycle.
  - ENCOURAGE LEAs to stay current in primary source research on best practices in technology integration and online learning.
  - HIGHLIGHT ePlan best practices for different size districts so that LEAs can compare themselves to schools with the same demographics, funding base and improvement needs.
- **Power On Texas** initiative, in which **Arp ISD** was featured, highlights best practices in technology integration. A similar strand might include best practices in providing online learning and/or virtual course support.

- **Project Share** has provided a way for teachers to gain access to an online course development system. This is a great way for teachers to organize and implement online course work.
- **The Texas Loaning Program Grant** has a great vision for online learning and for reaching the economically disadvantaged student needs by not only providing the devices but the access points for home use. This grant should be maintained and expanded!
- **Connected Texas** has begun a great effort to create online communities. They have done a great job in documenting broadband coverage and provider partnerships throughout Texas. As stated on their website, it only takes one household in a census block to be reported at some level to indicate an area on the map. Additionally, some of the providers listed for the Arp area are no longer in business.
- **TCEA & ISTE** provide continuous training and support to all types of educators. They provide direction and vision for district leaders and classroom teachers. These networking and professional learning communities provided the professional expertise I needed to realize success in my district.

ARP STATICS: Arp ISD provides individual student devices K-12th for extended instruction. We have given teachers professional development to build hybrid courses and virtualized learning environments. A recent meta-study (July, 2009), by the U.S. Department of Education (ED), reports that one of the most successful methods of improving student achievement is to provide them with a blended learning environment. The report asserts that hybrid courses help to boost student achievement above other types of environments. Arp ISD has experienced a leap in student success due to offering hybrid courses. This success has been dramatic especially with special needs students (JJAEP, ESL, 504, ECD, and certain ethnic groups).

Every Arp ISD faculty member has a Web presence: an instructional blog and Web 2.0 tools, third party providers (Gizmos, Study Island, iStation, United Streaming, AR/STAR, Atomic Learning, EasyTeach, EasyTech, and much more) and most have published online textbooks.) All students participate in virtual/hybrid online content. They have their own cloud storage, email, blog space, and Web 2.0 collaboration tools (Edmodo, Epsilen, Dropbox, Google Docs, School Web Lockers).

About 1/4 of our juniors and seniors participate in online courses through SUPERNet Virtual High School (VHS), the TxVSN, local college dual credit courses, and/or third party providers. We have offered online courses for over 10 years. My son was the initial pilot student 10 years ago for the SUPERNet VHS.

About 56% of Arp ISD students live in areas with little or no Internet infrastructure ("unlit" areas). With the hills and tall trees, we experience poor coverage with cell phones and Wi-Fi* devices as well. We have been very proactive in seeking solutions to this problem. We met with a very large Internet Service Provider and gained support from the local supervisors who presented this idea to their corporate office. They proposed to build a tower at Arp High School to deliver services to students' residences. This collaboration was set aside for other projects at the corporate office.

With the acquisition of the Texas Loaning Program Grant, Arp ISD is providing access points (air cards) for students to checkout and carry to the house. We realize that this type of access is limited to areas able to gain cellular signal strength as needed to connect an electronic device.

HISTORICAL INFORMATION: Arp ISD has partnered with multiple providers in the past to give students discounted access through the local cable company. These companies change hands so often that as one letter comes in from the corporate office approving the discount, another letter arrives proclaiming new ownership.

The first provider to go bankrupt was planning to provide SUPERNet schools with towers from Dallas to Jacksonville. You can read about this 2005 initiative at: http://www.arp.sprnet.org/default/inserv/trends/wireless.htm This ISP went bankrupt in 2006 after completing only a few towers.

The last provider which serviced Arp and surrounding areas also filed for bankruptcy in May 2012. This provider happened to service my home. In July, 2012, I was left with no other option than to purchase a radio antenna for over $400 to gain a small bit of bandwidth for my home. The monthly fee is double the previous provider and I lose connectivity during light rain storms. We could not expect over 56% of our student population to afford such an option.

CELLPHONE & Mi-Fi ACCESS: "Can you hear me now?", originated in Arp, TX.

BARRIERS

Infrastructure/Access Issues

- **PROBLEM**: Access to the home (last-mile infrastructure) is either <u>not</u> available in many rural areas, or is very spotty, or is priced <u>prohibitively</u> for consideration by economically disadvantaged households.
    - **POSSIBLE SOLUTION**: Arp ISD provides broadband & wireless access throughout all campus facilities and has extended wireless access to parking lots, stadium seating, and outside picnic tables. Through the TLP grant we are also providing cellular accounts and access points to the house. We would prefer to be able to be the "anchor institution" that shares the school's high-speed bandwidth with student users after hours and on weekends using appropriate technologies for flow-through access to the home. We would like to see an initiative that allows and supports LEA/business partnerships to build flow-through access for student accounts to the home.
    - **POSSIBLE SOLUTION**: A pilot program has already been initiated by the FCC allowing school districts to provide bandwidth to the home (April, 2011): http://tinyurl.com/8kp9wkj This project needs further investigation!
    - **POSSIBLE SOLUTION**: Funding for a WiMax* solution might be begun through state-funded one-time purchase of hardware. IMA funds might be used to help maintain the solution. Schools would them be able to control users and resources.

- o **POSSIBLE SOLUTION: Establish partnerships with providers such as Comcast Internet Essentials program for reduced rates to students and teachers: http://internetessentials.com/about/default.aspx**
- **PROBLEM: Access to the home may be available but not reliable during peak hours (when bandwidth is diverted by the provider to more populous areas), thunder storms, and/or power outages which are frequent in East Texas.**
  - o **POSSIBLE SOLUTION: Require online providers to supply students with downloadable content, videos, and simulations for an array of devices to use when students are without access**
- **PROBLEM: Partnering with Internet Service Providers has been unreliable in the past as companies were bought out, or changed hands, or went bankrupt.**
  - o **POSSIBLE SOLUTION: Allow one of the only stable entities in the Arp area, the school district, to become the provider to the home.**
- **PROBLEM: The new access status quo is now "the cloud" (servers that provide services normally provided by in-house machines) where storage, applications, and the new operating systems reside. Without access to "the cloud", parts of Texas are definitely in a different and yet, serious kind of drought.**

REPRESENTATIVE QUOTES

- **"In Honey Grove, we run near 80% economically disadvantaged. A large portion of our student population does not have access to the internet at home. Further compounding the problem, we are in a rural area where many students do not have traditional internet infrastructure available near their home. While non-traditional means are available (i.e. satellite or microwave) they offer yet another barrier as they are quite a bit more expensive. No access at home is a non-starter for us before we can even begin to contemplate how we structure this type of initiative within the district." Shawn Kibel, Director of Technology (used by permission)**
- **"In regards to rural schools like Honey Grove, unfortunately the scenario is being played out many times across the State. If you look at the Connected Texas web site, they map 9 different carriers provide broadband to the Honey Grove area! All of which charge waaaay too much for an economically disadvantaged home. The message to this committee is while the data may show broadband is available in rural areas it's not affordable for many families. The digital divide is alive and well when it comes to the economically disadvantaged in many rural areas of our State. My only suggestion to remedy this condition is to provide special funding to a community anchor institution that is willing to host WiMAX connectivity for their community." Carol Willis, Technology Director of Texas Education Telecommunications Network (used by permission)**
- **"I work in a small 1A district in East Texas that is at 80% e-rate discount and finding funding to get our students what they need and deserve is our biggest challenge at the moment. Schools are having to compete rather fiercely for what grants remain out there, leaving many of us to rely solely on the funding provided by the district/state. Even if I did receive a grant or gift that would allow me to purchase devices for our students, it would not be sustainable once the money dried up. I can't be assured of receiving any other injections of funding afterward... A virtual school structure would be a great thing if we could get the funding to get students involved in that type of learning environment and**

then sustain it perpetually with district funds." William Mansfield, Director of Technology (used by permission)

Provider Issues

- **PROBLEM**: Online providers that require students to connect to the Internet in order to access resources: textbooks, content, videos, presentations, and simulations become barriers to student access. The digital divide can be less impactful if students are given downloadable content, media, and assignments capable of being housed on the student's particular device
    - o **POSSIBLE SOLUTION:** Require publisher to create downloadable resources for a variety of devices in a variety of formats (ePub, HTML5, MP4, MP3, etc).
- **BLIND PROVIDERS:** The following questions were fielded to me by a 3-party vendor recently which made me realize that they do not see the barriers we face and therefore do not plan to implement solutions for those barriers. This publishers conversation when something like this (10/2/2012):
    - ▪ "With Texas being in the forefront of wireless access and infrastructure, don't all homes have access?" My response, " No"
    - ▪ "Doesn't your public library have access?" My response, "No, our community does not have a public library"
    - ▪ "Is there any public access in Arp?" My response, "No"
    - ▪ **VENDOR RESPONSE: "If no access, then that is a separate issue."**
- **MORE BLIND PROVIDERS**: Providers that sell textbooks to district as having "digital content" and who require a CD / DVD to be inserted into student's device to gain access to content are taking unfair advantage of unsuspecting faculty members. We have issued over 1000 devices and none of them have a CD/DVD drive. All those disks are useless. Can you imagine issuing 6 or 7 CDs to each student and expecting them to have them in a month?
    - o **POSSIBLE SOLUTION:** Digital content should not include CD/DVD as media unless the contents can be downloaded onto the student device or accessed and shared without the media in a drive.
- **PROBLEM**: Assignments in PDF format are static and are not user-friendly to students who need to use a word processor "fill in or answer" questions. Too often what happens is that the teacher or student prints the PDF and the student uses a pen or pencil to write in the answer. A true digital environment should not have to print student assignments.
    - o **POSSIBLE SOLUTION:** Require providers to give students downloadable copies of all assignments/handouts as both PDF and editable document (Word, Txt, Form) copies so that the original document remains intact as well as a copy available to be modified, edited, typed on without having to first print or keep two documents open at the same time.
- **PROBLEM**: Unresponsive providers
    - o **POSSIBLE SOLUTION:** Provide a hotline for gaining the attention of a provider and/or the Texas Education Agency. This could be simply an online form for any stakeholder to send comments, report prolonged issues, complaints, and/or give suggestions.
- **PROBLEM**: Non-engaging content with little or no real-world application, interaction, simulation, media or learning style considerations.

- **PROBLEM**: Assessments that are not aligned with online content or TEKS and/or not user-friendly
- **PROBLEM**: Students and/or Teachers do not have a voice in the learning environment. They cannot modify the order, depth, length, sequence, scope and/or application of learning objectives.

Funding Issues

- **PROBLEM**: Initial development of an online course is extremely time-consuming. But even after full course development there is the never-ending responsibility to field test, tweak, update, and expand the course. Not only should we ask how these teachers will be compensated, but how will districts be held accountable for funding these teachers? How will virtual principals be funded? How will on-site facilitators be funded? Virtual courses, just like conventional courses, require a team of folks to be effective.
- **PROBLEM**: When lack of last-mile access (to the home) is THE ISSUE, it has a domino effect on each facet of district funding including the IMA funds and how they are spent. When there is little access to the home, most funding will be spent on printed materials instead of online materials.

The IMA funding pool has greatly reduced our district's ability to provide new technologies and infrastructure because:(1) Educators still feel the need for printed materials and these are taking a large junk of this fund, (2) the technology department is asked to wait until everyone else is satisfied with their required materials before seeing what funding is left available to us. (3) Very little is left to us.

- **POSSIBLE SOLUTION:** It is my humble opinion that technology departments in Texas needs to know that Texas values their contribution to the overall success of teaching and learning both inside and outside the classroom by re-instating the Technology Allotment.
- **PROBLEM**: It is very difficult and challenging for the technology departments to support all the new demands on them (which have literally exploded in the last few years since everything has moved online or into the cloud). The result may be that student access suffers. Many districts struggle to provide the infrastructure for teachers, administrators, and the financial/business departments. This does not leave manpower and funding for expanding student access. To eek out the most from their budgets, IT departments often try to reduce the student to computer ratio by purchasing low-end single functioning or reduced-functioning devices (like eReaders or proprietary tablets). These devices will not serve the productivity needs of a virtual school learner.

Accountability Issues

- This is a very brief discussion on this topic. Sharing students around the state to available virtual schools has its benefits and its own set of accountability issues. When a large district sends a poor performing student to work in a small virtual school the dropout of that student from the course is negligible to the large district, but could have major impact on the much smaller virtual school.

Not only does funding play a role here, but there is also impact on:

- o the virtual teacher's time and energy
- o Other, more dedicated students, who were unable to take the course because the class was filled
- o Completion rates for the course provider

Who should be held accountable? Is the accountability for the larger district enough of an incentive to warrant local monitoring and managing of the student? Should the online teacher or the on-site facilitator be held accountable?

On-site Facilitator / LEA Distance-Learning Team Issues

- **PROBLEM: In order to offer distance learning opportunities to students in any district, there has to be a team of educators that can carry the vision through the planning, proposing, implementing, and evaluation stages. Building that team is crucial and communicating its vision to all stakeholders is also crucial. Informing students about all the online learning opportunities in the district and the state while gaining parent support, student initiation and enrollment, and successful completion takes a dedicated team at the local level.**
- **PROBLEM: Students being assigned online classes without a local on-site facilitator are less likely to complete the course and therefore waste time, energy, and funding while experiencing disappointment and failure. Lack of local support and supervision was the number one reason for the high dropout rates in online courses (20-30% higher than conventional) according to studies by Carolyn Gale, Vanderbilt University (2008) and Ormond Simpson (2003).**
  - o **POSSIBLE SOLUTION: A study by McLoughlin (2004) found that online learners needed a face-to-face facilitator (preferably a certified online instructor or someone with experience in online learning) to field technical and curriculum questions (and to sort the difference), to model communication and collaboration skills, to motivate, mentor and encourage students during difficult sections, unresponsive online team members, time management issues and to coach students in becoming less detached and overwhelmed.**
  - o **Even if the quality of instruction is available, research studies have shown that an on-site facilitator is required for face-to-face contact with students to provide initial orientation, establish expectations, facilitate communication, and establish identity in the course (McLoughlin, 2004). Online learning, especially at the K-12 levels more often than not requires encouragement, modeling, coaching, responsiveness, and resolution of problems or technical issues during the course of study (McLoughlin, 2004). The reliability of major assessments should also be relegated to the on-site facilitator who has been certified for confidentiality.**

Quality of Instruction Issues

- **PROBLEM: Whereas classroom teachers might occasionally "teach to the chalk board or merely deliver their content to the air" at some point during their day, the online instructor**

must be accountable for every word, example, strategy, graphic, video, link, and delivery method in an online learning environment. Their work will be scrutinized from an array of perspectives and educational levels and by myriads of stakeholders. Even with adequate training and certification, these cannot take the place of field testing, continually tweaking, and authenticating quality instruction for all types of learners in an online course.

FUTURE OF COMPUTING VIDEOS

- **Watch Google Glass Project:** `3:48` Cloud-based applications
- Watch Corning Glass & Windows 8 (Cloud-based) applications

RESEARCH RESOURCES:

(1) Means, B.; Toyama, Y.; Murphy, R.; Bakia, M.; Jones, K. (2009), Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. US Department of Education. http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf

(2) McLoughlin, C. (2004), The open classroom. British Journal of Educational Technology,   35: 505. doi: 10.1111/j.1467-8535.2004.00409_1.x

(3) Simpson, O. (2003), Student Retention in Online, Open, and Distance Learning. Kogan Page, London.

(4) Lynch, M. (2004), Online Learning: A guide to success in the virtual classroom. RoutledgeFalmer, New York.

TERMS:

*Wi-Fi Networks generally cover only a few hundred yards and are used most often inside buildings for wireless access.

*Wi-Max Network uses microwaves at 1 Gbit/s and is a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable or DSL.