

redesigning

the high school

EXPERIENCE

for College and Career Readiness
A GUIDE FOR SCHOOL LEADERS

Volume 3

*“Fostering an Entrepreneurial Spirit in Arts,
Audio/Visual Technology and Communications”*

Mosquero High School
Mosquero, New Mexico



REDESIGNING

THE HIGH SCHOOL EXPERIENCE FOR

COLLEGE AND CAREER READINESS

INTRODUCTION TO THE SERIES

The National Career and Technical Education Foundation (NCTEF) and Microsoft Corporation's U.S. Partners in Learning program have partnered to develop this guide for the series, "College and Career Readiness Program." The series showcases success stories of high schools that are creating a different kind of learning experience. The goals are to engage and educate students and successfully overcome the challenges of students dropping out and lack of preparation for college and career. These schools implement meaningful and relevant programs of study for students aligned to career clusters and 21st century skills. They provide examples and inspiration for other school leaders looking for best practices to guide the same success.

Each guide highlights an innovative initiative designed and launched to give students a high-impact experience within one of the school's programs of study. The initiatives provide a highly visible and tangible activity related to the knowledge and skills required in a career cluster. The goal of each guide is to tell the story of how the school successfully brought the initiative to life, sharing tips and insights for school leaders interested in aligning their curriculum to the Career Clusters model.

About the Partners

National Career Technical Education Foundation

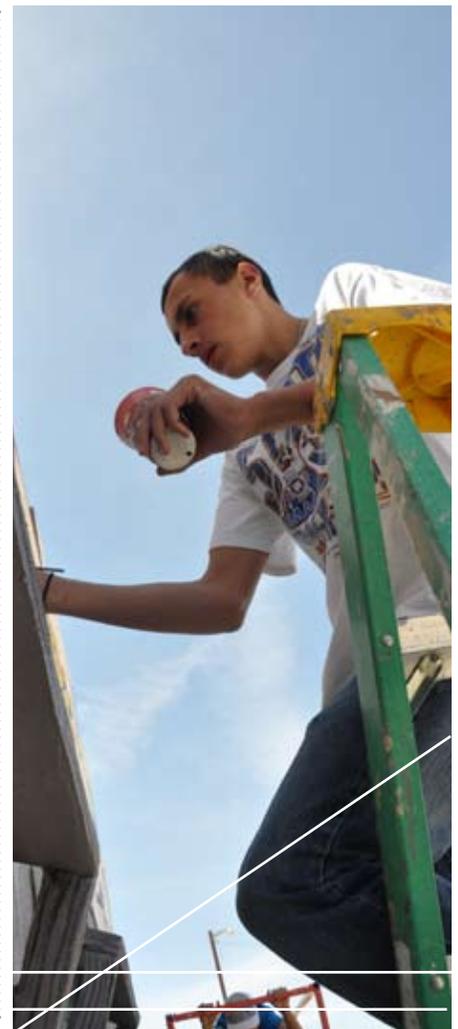
The National Career Technical Education Foundation (NCTEF) is a partner organization to the National Association of State Directors of Career Technical Education Consortium (www.careertech.org) and supports the association's goals and objectives through its 501(c) 3 status. The purpose of NCTEF is to develop and fund activities and programs that are designed to improve the career technical education system at the secondary, postsecondary and adult levels. NCTEF manages the States' Career Clusters Initiative, a nationwide effort designed to transform learning, modernize career technical education and improve student success.

Microsoft Corporation

Through the Partners in Learning (PiL) program, Microsoft is investing its resources—people, partnerships, services, philanthropy, and products—to stimulate positive change in education. Microsoft wants to help develop individuals and academic organizations to support 21st century learning, digital inclusion, and education reform. PiL projects all aim to:

- Create new 21st century learning communities.
- Help existing schools transform into 21st century learning communities.
- Develop skilled and innovative leaders.
- Increase adoption of innovative learning solutions through scale.

Because Microsoft believes that successfully creating and transforming learning communities can only be done through partnership, we work closely with educators, schools, school districts, state departments of education, and other organizations to create diverse projects that can serve as models for the future. For more information visit <http://www.microsoft.com/education/uspil/default.aspx>.



CAREER CLUSTERS

CAREER CLUSTERS ARE GROUPINGS OF OCCUPATIONS USED AS AN ORGANIZING TOOL FOR CURRICULUM DESIGN. INSTRUCTION IN A CAREER CLUSTER PREPARES LEARNERS FOR A FULL RANGE OF CAREER OPPORTUNITIES WITHIN THE CAREER CLUSTER, FOCUSING ON CRITICAL KNOWLEDGE AND SKILLS THAT ARE TRANSFERRABLE AS NEW OPPORTUNITIES ARISE AND THE INDUSTRY CHANGES.

Career Clusters Framework

Career Clusters are groupings of occupations used as an organizing tool for curriculum design. Instruction in a career cluster prepares learners for a full range of career opportunities within the career cluster, focusing on critical knowledge and skills that are transferrable as new opportunities arise and the industry changes. Nationally, 16 career clusters are recognized with 79 career pathways identified. This collection of career clusters and pathways present a way to categorize thousands of occupations currently available.

The Career Clusters framework is an approach used by schools to orient career exploration and career guidance, select curriculum offering, show relevance of academic courses, and engage community civic and business leaders in partnerships. This approach differs from a system where schools provide instruction on specific occupations, often separate from the general curriculum. Career Clusters is valuable in supporting effective transitions between secondary and postsecondary education by impacting the design of programs of study offered by a school. A program of study is a sequence of instruction consisting of coursework, co-curricular activities, work-site learning, service learning and other learning experiences. Approved programs of study are required for school systems to be eligible for federal Carl D. Perkins funds that support career and technical education.

The Arts, Audio/Video Technology, and Communications Career Cluster

Broadly, individuals that work in this cluster are involved in designing, producing, exhibiting, performing, writing, and publishing multimedia content. Career fields in this cluster range from visual and performing arts and design to journalism and entertainment services. The Arts, Audio/Video Technology, and Communications Career Cluster identifies five career pathways:

- **Audio and Video Technology and Film Pathway** - Includes careers that are involved in the presentation of sound, video and data to groups in a variety of public and private venues.
- **Printing Technology Pathway** - Includes careers that are involved across all three stages of the printing process—prepress, press and binding or post-press.
- **Visual Arts Pathway** - Includes careers that use a variety of methods—painting, sculpting or illustrating—and an assortment of materials to communicate ideas, thoughts or feelings.
- **Performing Arts Pathway** - Includes careers that involve businesses and groups who manage, plan and produce theatrical and musical performances.
- **Journalism and Broadcasting Pathway** – Includes careers involved in preparing and broadcasting information to inform us about local, state, national and international issues.
- **Telecommunications Pathway** – Includes careers involved in setting up and maintaining telecommunications equipment that is used to communicate data, graphics and video.



CAREERS IN THIS CLUSTER

Actor
Audio Systems Technician
Audio-Video Designer
Engineer
Broadcast Technician
Commercial Artist
Commercial Photographer
Computer Animator
Curator/Gallery Manager
Dancer
Director and Coach
Editor
Fashion Designer
Graphic Designer
Journalist
Musician
Playwright
Printing Equipment Operator
Production Coordinator
Station Manager
Telecommunication Technician
Videographer
Video Systems Technician
Web Page Designer



MOSQUERO MUNICIPAL SCHOOLS:

Arts, AV Technology and Communications Cluster

Often, we hear that small, rural schools do not have the capacity to implement the call for educational reform. Mosquero Municipal School District proves that this assumption is wrong. This small rural school is a leader with many replicable practices for schools of any size and in any location. In 2005, Mosquero Municipal Schools began reinventing the high school experience by building a unique program of study, called the Digital Media Entrepreneurs curriculum. This program has transformed the middle and high school experience for students by offering project-based courses in communications, multi-cultural studies, media-production, journalism, graphic and printing communication, computer-graphics, and visual arts. Coursework and project-based learning are coordinated through a unique school based business called, Roundup Technology, which is operated by students in collaboration with school and community leaders.

STRATEGIC PLANNING

Strategic Planning – the 6i Process

The 6i process is an effective framework that guides each school in finding the right answers for that particular school. The process allows flexibility for schools to progress through phases at their own pace. The six stages of the process are

INTROSPECTION

INVESTIGATION

INCLUSION

INNOVATION

IMPLEMENTATION

INSIGHT

For more information on how to use the 6i process in developing and implementing your strategic plan, visit http://www.microsoft.com/education/pil/ISc_6iDevProcess.aspx.

VISIONARY LEADERSHIP

IDENTIFYING THE OPPORTUNITY

- Mosquero Municipal Schools are located in Mosquero, New Mexico (see map).
- The school district serves a rural and sparsely populated area of more than 2,125 square miles mostly located in Harding County, New Mexico. The school also serves a small population from neighboring San Miguel County, New Mexico. The population of Harding County is approximately 710 with 120 citizens living in the county seat of Mosquero.
- There are 44 students enrolled in kindergarten through grade 12. Twelve students are enrolled in grades nine through 12. The average graduating class size is four students.
- Mosquero typically graduates 100 percent of each senior class, with 100 percent of the high school graduates pursuing post secondary education. Eighty percent of those students finish a two or four year post secondary degree.
- During the 2008-09 academic year, approximately 47 percent of students grades nine through 12 qualified for free or reduced-price lunch.
- The student population at Mosquero Municipal Schools is 50 percent Caucasian and 50 percent Hispanic.
- Agriculture, specifically ranching, accounts for 85 percent of the county receipts. Many ranches in the area are multi-generationally owned. Carbon Dioxide Extraction is the other main industry in the county.
- The Roundup Technology Company and Digital Media Entrepreneurs curriculum started in 2005. Each year the curriculum engages approximately 24 students grades seven through 12.



Individuals who desire to redesign the high school experience have much to learn from the visionary leadership that prompted the transformation at Mosquero Municipal Schools. The changes happening in the school today began when a small group of community leaders joined together to assess the community's strengths, weaknesses and opportunities. In 1995, a group consisting of parents, current and past school board members, educators, city council members and long-time community residents came together in response to some immediate needs. At that time, a dilapidated school building, growing sense of rural isolation, lack of technology access, and a fledgling local economy prompted the group to take action. Recognizing the community needs, organizing a group of committed citizens and taking action are all initial steps for school leaders interested in redesigning the high school experience.

Often, when groups consider reform efforts they begin by considering the new programs they would like to implement. The community group in Mosquero demonstrates that it is important to begin by considering the infrastructure needs in a community and school before considering the actual programs. By considering the needs first they were better able to define the type of learning environment they wanted and the technology infrastructure needed to support their vision. Without physical and technological infrastructure, new programs may not be able to grow and thrive over time. The group of concerned community members began building infrastructure by proposing a significant bond issue for the school district. Garnering the support necessary to pass the bond took a significant door-to-door campaign within the local community. Near the same time, the community also sought a significant capital

outlay from the New Mexico State Legislature along with a federal rural technology access grant. The bond and capital outlay funded repairs to the declining school buildings and provided funds to bring up-to-date technology into the school. The federal grant provided each family in the community a home computer and access to a local internet provider. Community member Mr. Terry Mitchell reflected, “Building physical and technological infrastructure provided the foundation for our community to grow and thrive.”

Internal champions are often at the heart of most successful school reform efforts. This may be an individual or a group of individuals who become central to implementing the desired changes. It’s important for leaders to recognize and empower these people early in the reform process. If none exist, it’s important to consider identifying and cultivating a group to serve in this capacity. Mrs. Donna Hazen is an important internal champion for the changes occurring at Mosquero Municipal Schools. Hired in 2002, Mrs. Hazen’s capacity to serve as an important internal champion at the school was immediately recognized by the community members. The concerned community members wanted to do a better job of incorporating into the school the technology assets acquired several years earlier and they were also interested in finding ways to bring new businesses into the community. Together with school officials, the group met to analyze the community assets and developed a plan. Mrs. Hazen reflected, “As I looked around the community, I saw two immediate assets – technology and talented students.” The group also decided to encourage economic development by fostering an entrepreneurial spirit among the youth in the community. In a community where a majority of the population is involved in ranching, it is vital to stimulate the development of new jobs to build a robust local economy for individuals who do not own land. The group believed this could best be achieved through developing a unique program at the school.

Another critical factor in Mosquero’s success is the incremental development of the new program of study. Often, after identifying the opportunity, leaders become energized by a compelling long-range vision and take on too much, too quickly. Mrs. Hazen demonstrated a different approach. She started by doing what she could within her own classroom to build upon the available assets. She began by implementing a small, unique project called Familias’ de Nuevo Mexico in her seventh and eighth grade language arts classes. Through this project-based learning experience, students use technology to gather and synthesize information from interviews, guest speakers, field trips and independent research to tell the story of local citizens through print and a dramatic production. Over a three-year period, Mrs. Hazen leveraged her initial successes with the Familias’ project to build several project-based courses in media, communications and technology for high school students. She said, “It was not easy to convince everyone that a small school like ours needed to offer more than one elective.” However, over time, Mrs. Hazen worked with the community and students to build the necessary interest to justify a new series of electives. Today, this innovative curriculum is known as the Digital Media Entrepreneurs Curriculum. In each of the courses, Mrs. Hazen works with students to identify a group project related to services needed in the community (e.g. a newspaper). This project contextualizes the course content. The projects created through the curriculum operate like a quasi-business called Roundup Technology. (See the sidebar for a complete listing of courses in the Digital Media Entrepreneurs Curriculum as well as the related Roundup Technology business units.)

When asked if the new curriculum was what they originally envisioned, Mrs. Kim Mitchell, an original member of the group replied, “Definitely, however we didn’t envision the specifics. We were just a concerned group trying to do their best.” Since inception, the Digital Media Entrepreneurs curriculum has gained recognition from state and federal legislators, local and state media and the community. Like any new initiative, this one is multi-faceted and requires the ongoing engagement of multiple support groups, a focus on 21st century skill development, innovative teaching and learning and funding. The following guide provides insights into the lessons learned, best practices, and decisions the project team encountered as they formed the new program of study.

The most valuable thing I’ve learned is how to effectively work with paints and colors. This is valuable because I want to be a clothes designer and the art of painting will help me with color mixing and the designing of clothes.

Cassy Thomas – Roundup Artist and Roundup Creations



THE AGILITY TO INNOVATE

School leaders interested in redesigning the high school experience will quickly note that reform efforts require adequate resources. Often, however, we focus most attention on funding from external sources. While external funding is one component of an overall funding plan, there are a number of sources to explore. In fact, this very issue is one of the practices the project team at Mosquero is quick to point to as a lesson learned. Based upon Mosquero’s journey, several areas to consider in a funding plan include internal sources, community support, grants and in-kind sources.



Internal Funding

Often, an innovative new program can be its own best source of funding. However, as illustrated in Mosquero's case, this source is often overlooked. Several years after beginning implementation, the project team at Mosquero identified that the cost of consumables was quickly becoming a financial roadblock to program viability. After much debate, the project team began charging clients a small fee for the services offered through the Roundup Technology businesses. For instance, students working with Familias' de Nuevo Mexico charge a small fee for the dinner theater and sell copies of the memory books they create to local history enthusiasts. The Harding County Roundup also charges a small subscription fee and sells ads, designed by student artists. To establish pricing, students conduct surveys and comparative market research for similar services in the region. The fees collected within each of the business units assist in covering the cost of materials necessary to run each business. Students reinvest any surplus from the fees collected back in the program to improve the quality of the project-based learning experience. For instance, recently the Familias de Nuevo Mexico program had a surplus of funds and decided to purchase new stage lighting for the annual production.

Grants and Partnerships

This source is likely one of the first sources considered when thinking about program funding. However, it is important to be strategic when considering this particular source. Mr. Bill Ward, Mosquero superintendent says, "We are strategic in where we look for funding. We ask ourselves three questions when considering a funding source: What do we need to do to enhance learning for our students? Will this be sustainable? Where can we find a partner who will help us achieve our goal?" Since beginning implementation in 1992, grants have helped to expand the digital media curriculum into new areas such as offering new print services. Leaders at Mosquero, however, are quick to recognize that grants are not just about funding. For example, through one of the grants Mosquero has developed a unique partnership between Microsoft Partners in Learning, the New Mexico Office of the Governor, and the state Public Education Department. This partnership seeks to develop innovative education programs where technology was an appropriate solution. Mosquero applied for and participated in a three-year partnership that has provided funding to purchase necessary hardware, software, professional development materials and other learning materials to make business units like the Tech Squad, Roundup Video Production, and Roundup Print Studio a viable educational opportunity. In addition to funding, the project team at Mosquero gains business expertise from Microsoft as they implement each of the business unit projects.



Community Support and In-Kind Products Services

Another important aspect to consider when building a funding plan is community support and in-kind services. In Mosquero's case, community support has increased as the program has grown and attracted positive press. To secure community support, students often host fundraisers to collect donations to complete resource intensive activities like the murals in the "Paint the Town" project. Additionally, community support groups voluntarily donate funds and materials ranging from \$50 to \$1700 to ensure the continuation of the program.

In addition to covering the cost of materials and keeping students in touch with up-to-date technology, the program relies on in-kind services to connect students with the experts and resources necessary for learning within the Digital Media Entrepreneurs curriculum. Professional mentors including technology consultants like Mr. Tony Carlson, newspaper professionals such Mrs. Paula Murphy, owner of the Raton Range, and artists like Mr. Doug Quarels make in-kind donations of their time to see the program succeed. When funding is available, the program provides honorariums to bring in experts. Further, in-kind training and courses from New Mexico State University Extension, Amigos Bravos, and Mesa Lands Community College have all assisted in ensuring a high quality educational experience through the curriculum and Roundup Technology business.

THE BOTTOM LINE: STUDENT SUCCESS AND 21ST CENTURY SKILL DEVELOPMENT

A critical aspect of redesigning the high school experience is the development of skills to survive and thrive in the 21st century knowledge-based economy. Students at Mosquero are learning and practicing 21st century skills through experiences in the Digital Media Entrepreneurs curriculum and engagement with the Roundup Technology businesses. Analyzing Mosquero's unique program reveals several best practices for encouraging 21st century skill development.

Integrating a Real-World Employment Experience in the Curriculum

"Employment" in one of the Roundup Technology businesses is an integral part of the Digital Media Entrepreneurs curriculum. After enrolling in the curriculum, students must apply for a Roundup Technology job that interests them and engages their talents. All positions have a job description that lists the daily tasks and requisite experience necessary to "hold" the position. To obtain a position, students must submit a resume and interview with the student manager for that particular area to demonstrate readiness. Additionally, once "hired," employees must read and sign a copy of a standard employee handbook. The short, one-page list of expectations provides a set of clear expectations for performance. Students are held accountable for performance through a weekly log of their accomplishments and periodic employee evaluations with the class sponsor and student managers. Students also have the opportunity to work "overtime" and earn a small salary for their efforts. Proponents suggest that this is an opportunity to reward students and help them make the link between work ethic and compensation.

Enacting a Student Management Structure

The business units within Roundup Technology share resources and offer services to each other in a project-team format. More experienced students take on the role of being a manager over a team within each unit, which usually includes a team of three to four students. The student managers are responsible for training new employees to use the technology and tools available within the business unit. Each team is responsible for holding meetings on a regular basis to discuss upcoming projects, performance, team issues and new ideas for expanding the business. The student managers are responsible for managing a production

The most valuable thing that I've learned from the Roundup Technology program is how to work in a real business and how it "functions." I love how intense it can be and how the deadlines make everyone work very hard.

Twila Gutierrez – Roundup Editor

calendar related to their particular business unit. The calendar links business goals with individual work responsibilities. Each business unit has a line item in the school budget. Students are involved in the ongoing pricing of services, budgeting, marketing and business planning. All students in each unit take turns working with the school business manager to purchase needed equipment and supplies. When purchasing resources students research the available options, complete requisitions and monitor their budget.

A Focus on Transferrable Rather than Occupational Skills

Mosquero project team members recognize that many students who complete the program will not end up pursuing a career or advanced studies in a field related to arts, audio/visual technology and communications. To keep the program relevant to a broad base of students, they use the career cluster framework as a model. This model keeps them focused on preparing students for a variety of careers within the cluster and related fields. In fact, some recent graduates are pursuing advanced study in related fields such as business and engineering technology. Because of the focus on transferrable skills, these students are better prepared for both horizontal and vertical movement in a wide range of career fields.

INNOVATIVE LEADERSHIP AND TEACHING



Another critical aspect involved in redesigning the high school experience involves a transformation of teaching and learning practices. Bringing the Digital Media Entrepreneurs Curriculum to life required Mosquero school leaders and the teachers to think differently about their pedagogy. Upon closer examination of the program at Mosquero, there are several key innovative practices to consider.

Assessment of Learning Through Portfolios

Student grades are tied to the artifacts they create through involvement in the Roundup Technology business structure. Students are required to keep a portfolio of their best work starting with the artifacts produced for Familias' de Nuevo Mexico in the seventh grade. Portfolio artifacts are graded using rubrics based upon the state learning standards. Students also create and update a written or visual description of the type of career they wish to pursue. Students research the required education and tools of the trade, interview a professional in the field, gather sample job and college applications, and develop a resume.

Professional Development

The Digital Media Entrepreneurs curriculum and Roundup Technology businesses require technology and software to manipulate graphics, video and artwork. To encourage all teachers to use the technology, the district provides professional development. A unique aspect of this training is the fact that students and teachers both attend the professional development. Mrs. Donna Hazen, Roundup Technology sponsor says, "In a small system like ours it's not feasible to only train the teachers and expect them to disseminate the information." Mosquero schools find success in making students co-learners with the teachers during training on a new software or technology. As a public service, community members are also invited to attend some training sessions.

Use of Outside Experts

Roundup Technology sponsor, Mrs. Hazen says, "To be successful in a project-based learning environment it's important to let go and give responsibility to students. It's okay [for the teacher] to not know everything." Mrs. Hazen sees herself as a facilitator of learning. For example, she often seeks outside experts to "fill in the gaps" when she does not have the background to train the students in a particular area. For example, when students proposed the video production suite Mrs. Hazen worked with the administration and her network of contacts to identify an expert to bring in as a guest to train in how to use the video production technology. The tenure for the guest experts vary. Some guests travel to the school to work with students for a day. Mrs. Hazen also takes the students to the experts. For example, students regularly pay visits to the Raton Range, the press that publishes The Harding County Roundup, to work with the newspaper staff. Most recently, the school engaged Mr. Doug Quarels, a renowned muralist in New Mexico. Over the course of a year, Mr. Quarels assisted the Roundup Artists business unit in planning and painting murals to restore several downtown storefronts. Mr. Quarels says, "As someone who isn't a teacher by trade it's very rewarding to work directly with the students. It can also be frustrating. I remind myself that they are still learning. Each day, I am impressed with how much the students learn."

Ties to Academic Standards and Graduation Requirements

Mrs. Janice Green, instructor at Mosquero, says, "I keep track of graduation requirements for our school. With such a small school and so many students interested in the Digital Media Entrepreneurs curriculum we have to be very strategic in how we map the course experiences back to the required graduation requirements so that students have the chance to experience the Roundup Technology program and still graduate." Students may use one of the four high school courses in the curriculum to meet one of New Mexico's state requirements for a unit of career clusters or workplace readiness. The other courses will show up as electives. However, from a philosophical standpoint, each of the courses has been tied to specific academic standards and benchmarks for language arts and social studies. The district believes that all courses should help students understand relevant connections between technical skills and academic learning.



The most valuable thing I've learned from the Roundup Technology program is being punctual and managing my time properly.

Adam Mitchell – Photo Studio Manager

PARTNERSHIPS THAT MAKE A DIFFERENCE

From my experience in the Roundup Technology program, I have learned what it is like in a real work place environment.
Reba Garrison – Roundup Student Editor



Collaboration is a hallmark of many successful efforts to redesign the high school experience. Mosquero's journey illustrates this point and provides several best practices to consider when implementing a program similar to the Digital Media Entrepreneurs curriculum. "Being learners" is a motto that guides interactions between the project team at Mosquero High School and the multiple partners they engage with this program. As they reflect on lessons learned through implementation, leaders from the project team at Mosquero identify two important practices to consider when developing strategic partnerships. First, leverage the community's expertise and connections. Second, assemble an advisory team.

Leverage the Community's Expertise and Connections

Leveraging community expertise starts with school leaders and project team members becoming active and involved members of the community. For example, Donna Hazen engages Amigos Bravos, a local community group, for input and assistance. Becoming part of a community organization provides instant links with a variety of local experts. For instance, community members from Amigos Bravos assist the project team at Mosquero schools by serving on the board of directors for Roundup Technology where they work closely with student managers to share business advice and guidance. Once community members become actively involved in the program, they often begin to offer connections to other opportunities, which can enhance the quality of learning for students. In Mosquero, members of Amigos Bravos were so impressed with the students they met that they offered to host a youth entrepreneurship fair where students created and showcased business plans, met business leaders from around the state and earned cash prizes to start their businesses.

Assemble an Advisory Team

In addition to local and regional partners, Mosquero schools put together a professional advisory team to provide them with advice and guidance as they implement the new curriculum. The professional advisory team includes volunteers from the New Mexico Public Education Department, Microsoft's Academic Program Manager, New Mexico Rural Revitalization Commission, Mesa Lands Community College administrators, Professional Artists, Technology Consultants and administrators from other schools in the state who are also trying to redesign the high school experience. The project team, including members from the Roundup Technology board of directors, interface with this team of professional advisors on a regular basis to identify best practices, reflect on progress and set new directions. Mrs. Donna Hazen, Roundup Technology sponsor says, "Having a team of professional advisors helps us expand our thinking. It's an honor to connect with smart people who can help us find the right resources at the right time."

TECHNOLOGY FOR 21ST CENTURY LEARNING

Technology is core to success in the 21st century. Analysis of Mosquero's unique program reveals several principles for effective incorporation of technology to promote 21st century learning. First, make it a priority to put students in touch with best-in-class technology. Second,

sequence technology experiences to help students acquire the skills necessary to use technology as a tool for learning. Finally, offer students innovative opportunities to develop a deep understanding of how the technology works.

Building Foundational Skills with Technology

Interactions with technology should be thoughtfully sequenced to build students' competence and confidence with using the tools to accomplish a variety of tasks. At Mosquero, experiences with technology begin during the Familias' de Nuevo Mexico project in seventh and eighth grade and continue throughout high school. Early experiences with technology lay an important foundation for engaging with the technology available in high school courses. Some programs and tools to include in a program similar to Mosquero's include:

- Microsoft Office Applications such as Word and PowerPoint to express creative ideas
- Internet research and decision-making search engines
- Graphic design and production software such as Microsoft Publisher
- High quality scanners to digitally restore old photographs
- Professional grade poster printer and a press quality copier to produce projects for community members and organizations
- Professional grade cameras to take photos for families and events
- Software programs that allow students to digitize original artwork for publications and to prepare for projects that require advanced scaling techniques like the "Paint the Town" project



ENACTING CHANGE IN THE REAL WORLD

As with any large initiative, obstacles will emerge, and solutions must be generated to deal with them. Mosquero is no exception to this rule. Building a new program of study option for students and implementing a school-based enterprise has been a challenging effort for everyone involved. In recalling the experience to date, leaders at Mosquero offer several lessons learned for other school leaders.

Keeping Technology Up-to-Date

Machines arriving with a manufacturer flaw or working within the constraints of the school's procurement policies slows down the integration of technology in the classroom. To ameliorate these issues the students maintain a detailed inventory regarding all equipment including purchase date, logs of upgrades, and other important details. During team meetings, the group reviews this information to determine when to upgrade equipment.

Scheduling

Scheduling issues were addressed through implementing practices that promote planning and flexibility. For instance, during large projects such as the "Paint the Town" initiative, it was necessary to work within the professional artist's schedule. To work around this, Mrs. Hazen began identifying certain days as a "project" day and then met with other teachers to coordinate around those "project days" so that students weren't missing important events such as tests or key lectures. By establishing the "project days" at least a month in advance and coordinating schedules, students were able to participate in a focused and meaningful way when the professional was available.

Managing Direction Through a Board of Directors

With so many moving parts and pieces it was necessary to find an effective way to manage the program. To solve this issue, Mosquero established a board of directors consisting of school leaders, students, parents, teachers and community members. The board meets bi-monthly to discuss current performance and future goals for the program. This group also conducts an annual strategic planning session to assess the viability of the Roundup Technology Businesses and consider needed changes to the curriculum based upon student interest and community needs. The board is also the body that reviews student-generated proposals for new businesses. For example, when the student managers expressed an interest in opening a Wi-Fi Café and Soda Shop, the board requested a formal business proposal before they would consider the idea. Mr. Tom Mitchell, school business manager, says, "We treat the students like we would any adult bringing an idea before the committee. It's okay to challenge the students because they are still learning."



"The most valuable thing I've learned from the program is the importance of developing my talents in art. This program taught me to follow my talents and do something with them."

Gabriel Trujillo – Harding County Roundup Artist and Lead Artist for the Roundup Technology "Painting the Town" project.

KEYS TO INTEGRATING NEW INITIATIVES

Connect to community: Identify how the initiative addresses a community's identified need, and connect community leaders to the idea in the planning stages to generate further ideas.

Tie into strategic and improvement plans: Recognize the opportunity to use the initiative to advance a strategic or school improvement goal. Minor modification or supplements may be required but will be well worth the effort to show progress on key goals.

Engage teachers in identifying opportunities: When presented the vision for the initiative, many great teachers will be able to think of ways to leverage the project to improve their curriculum and classroom experience.

Invest in school counseling efforts: A new initiative can have unexpected impacts on how students choose courses and identify educational goals. Work with school counselors to discuss ideas to prepare for the changes.



KEY ISSUES TO SUSTAINING INNOVATION

The Roundup Technology business and Digital Media Entrepreneur curriculum at Mosquero High School provide critical 21st Century skills development. Mosquero recognizes that sustaining this initiative requires maintaining an engaged base of community volunteers, ensuring commitment, and promoting student leadership and ownership of the program.

Generating New Community Volunteers

Maintaining commitment and enthusiasm among community volunteers is critical for the long-term viability of the program. Mrs. Mary Campbell, a community member says, "We cannot do this forever, we want the young people to graduate, pursue an education, gain real-world experience, and move back to this community to help us build the community." To address this need the community is collaborating with a regional economic and natural resource preservation group called the Ogallala Commons. This partnership yields leadership and training opportunities for past graduates and entrepreneurs who are interested in returning to Mosquero to start a local business.

Ensuring Long-term Commitment

Certainly, Mrs. Hazen is integral to the Roundup Technology business; but to be sustainable, she works with community members and her administrator to ensure ownership of Roundup Technology is a shared responsibility. Ongoing communication and celebrating success together helps to ensure that the program is not isolated to one person's vision and leadership.

Student Leadership and Ownership

Mrs. Hazen reflects, "We are proud that our students not only look good on paper, they actually do the work." Students enrolled in the Digital Media Entrepreneur curriculum are truly in the driver's seat when it comes to the direction of their learning. Students take pride in the work they do and, in turn, they produce tremendous results. Mr. Ward, superintendent says, "Our students understand that it is an honor to be in this program. It shows in the way that they respect the equipment and the initiative they take when they bring forward new ideas business."



"My teaching mantra involves three questions. Do you have a purpose? Do you have permission? Are you being productive? In a project-based learning environment you have to empower students to take charge and think about their actions."

Donna Hazen – Roundup Technology program sponsor



Find additional guides from this series at:

www.careerclusters.org/publications.php

or

www.microsoft.com/education/uspil/downloads/

RESOURCES TO ENACT CHANGE

The following are free resources available from the States' Career Clusters Initiative.

Career Clusters Brochures

These brochures provide an overview of the careers and fields of study in the career cluster. Each brochure discusses employment outlook and encourages students to prepare for both college and career. <http://www.careerclusters.org/resources>

Sample Plans of Study

The sample plans of study can be used by schools to identify the academic courses, CTE courses, and other experiences or activities that can contribute to careers in a pathway. The plans of study become excellent guidance and planning tools. <http://www.careerclusters.org/resources/web/pos.cfm>

Critical Components for Implementation of Career Clusters - Local Rubric

Those school systems successfully implementing Career Clusters have identified 15 critical components for success. This rubric helps school leaders evaluate progress in implementing Career Clusters and establish objectives for further development. <http://www.careerclusters.org/publications.php>

Knowledge and Skills Charts

National advisory committees have developed and maintained Knowledge and Skills Charts for each of the 16 Career Clusters and 79 Career Pathways. Each chart identifies the knowledge and skills common to all careers in that cluster/pathway. <http://www.careerclusters.org/resources/web/ks.php>

Student Career Interest Survey

A free career guidance tool that helps individuals identify the top three Career Clusters of interest. This pencil/paper survey takes about fifteen minutes to complete and can be used in the classroom or for presentations with student audiences. <http://www.careerclusters.org/ccinterestsurvey.php>

The following free resources available from the Microsoft Corporation, through US Partners in Learning, MS Research, and other programs

Career Forward

Career Forward. Is an online, emotionally-engaging, media rich course that can be used in the classroom or as a stand-alone. It helps students understand the importance of competing in a global economy. <http://nroc.careerforward.org/careerforward/>

Partners in Learning Network (PILN)

To help administrators and teachers connect with their peers and find trainings and resources to support their work, encourage them to sign-on to the PILN. <http://www.us.partnersinlearningnetwork.com>

Establishing Public/Private Partnerships

States, districts, and schools all agree that the private sector can help think through cost efficiencies and understand how to leverage business expertise. This paper describes how to form successful education/ business partnerships. <http://www.microsoft.com/education/public.mspx>

Scale Online Tutorial

The best way to save money is to offer existing programs to more students without increasing costs. This is thought of as "scaling up success." This planning tool walks through the process of scaling an existing program across schools, districts, and even states. <http://www.microsoft.com/education/demos/scale/index.html>

Education Competency Wheel

This competency wheel offsets these costs by outlining four professional proficiency levels for each of the 37 competencies and self-assessment guides to measure professional ability. <http://www.microsoft.com/education/competencies/default.mspx>

Digital Citizenship and Creative Content

Intellectual Property is a critical 21st century issue we all face. Help students understand creative rights and how to be good digital citizens with this online curriculum. <http://www.digitalcitizenshiped.com/>

Digital Literacy Curriculum

Offer digital skill development to your students by pointing them to this outstanding curriculum. From using the Internet, to sending e-mail, this curriculum helps you develop the essential skills you need to begin computing with confidence. <http://www.microsoft.com/about/corporatecitizenship/citizenship/giving/programs/up/digitalliteracy/default.mspx>

Channel 8

Channel 8 is THE place to be for STUDENTS who want to code, connect and create technology. Stay plugged into tech news and share in the experience with students around the world. <http://channel8.msdn.com/>

Elevate America

Microsoft is committed to strengthening the U.S. economy and increasing global competitiveness by improving access to education and workforce-readiness skills required for twenty-first century jobs. ElevateAmerica is an initiative designed to provide 1 million vouchers for Microsoft E-Learning courses and select Microsoft Certification exams at no cost to recipients. <http://www.microsoft.com/about/corporatecitizenship/us/communityinvestment/elevateamerica.aspx>

SAMPLE PLAN OF STUDY

This sample plan of study shows the courses suggested for a student interested in the Arts, Audio/Visual Technology and Communications Career Cluster. The plan emphasizes college preparation and career-related courses and activities that position the student for success in a broad array of arts, technology and communication related fields. The Digital Media Entrepreneurs curriculum at Mosquero follows this national sample.

To download this sample in either PDF or Microsoft Excel format, visit www.careerclusters.org/resources/web/pos.cfm. Sample plans of study for all 16 career clusters and 79 pathways are available.



SAMPLE

Arts, Audio/Video Technology and Communications: Journalism and Broadcasting Career Pathway Plan of Study for ▶ Learners ▶ Parents ▶ Counselors ▶ Teachers/Faculty

This Career Pathway Plan of Study (based on the Journalism and Broadcasting Pathway of the Arts, Audio/Video Technology and Communications Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. *This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Math	Science	Social Studies/ Sciences	Other Required Courses Other Electives Recommended Electives Learner Activities	*Career and Technical Courses and/or Degree Major Courses for Journalism and Broadcasting Pathway	SAMPLE Occupations Relating to This Pathway
<i>Interest Inventory Administered and Plan of Study Initiated for all Learners</i>								
SECONDARY	9	English/ Language Arts I	Algebra I	Earth or Life or Physical Science	World History	All plans of study should meet local and state high school graduation requirements and college entrance requirements. Certain local student organization activities are also important including public speaking, record keeping and work-based experiences.	<ul style="list-style-type: none"> • Introduction to Arts, Audio/Video Technology and Communications • Information Technology Applications • Media Arts Fundamentals • Journalistic Research • Publication Journalism • Broadcast Journalism 	<ul style="list-style-type: none"> ▶ Art Director ▶ Audio-Video Operator ▶ Broadcast Technician ▶ Control Room Technician ▶ Design Director ▶ Editor ▶ Journalist ▶ Light Director ▶ Producer ▶ Publisher ▶ Radio and Television Announcer ▶ Reporter ▶ Researcher ▶ Station Manager ▶ Writer
	10	English/ Language Arts II	Geometry	Biology	U.S. History			
	11	English/ Language Arts III	Algebra II	Physics	Political Science Economics			
	<i>College Placement Assessments-Academic/Career Advisement Provided</i>							
	12	English/ Language Arts IV	Trigonometry or other math course		Psychology			
<i>Articulation/Dual Credit Transcribed-Postsecondary courses may be taken/moved to the secondary level for articulation/dual credit purposes.</i>								
POSTSECONDARY	Year 13	English Composition English Literature	Algebra	Chemistry	American Government Psychology	All plans of study need to meet learners' career goals with regard to required degrees, licenses, certifications or journey worker status. Certain local student organization activities may also be important to include.	<ul style="list-style-type: none"> • Ethics and Legal Issues • Electronic Media Production • Technical and Design Aspects of Broadcast Production • Journalism and Broadcasting Business Issues • Continue Courses in the Area of Specialization • Complete Journalism and Broadcasting Major (4-Year Degree Program) 	
	Year 14	Speech/ Oral Communication	Computer Applications	Biological Science Physical Science	American History			
	Year 15	Continue courses in the area of specialization.						
	Year 16							



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SAMPLE



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<http://www.microsoft.com/education/uspil/default.aspx>