

## Career-Tech Time Machine

By Greg Monberg and Riyad Bannourah

*In the 1940s, 50s, and 60s, the skills needed to have a successful career were very different than they are today. This case study of the Hammond Multimedia Broadcast Academy shows how one Rust Belt community has revamped its approach to career and technical education and is preparing students for jobs in the new economy.*

The dedication plaque at the entry of the Hammond Area Career Center in Hammond, Ind., displays this quote from Benjamin Franklin – “He that hath a trade hath an estate.” Published in 1758, this famous dictum was made at a time when career training was very different. An apprentice could learn his trade under the tutelage of a master in the guild system. In such an environment, workers developed highly specialized skills which guaranteed a profitable career and an “estate.”

When the Hammond Area Career Center opened in 1950 – then named the Hammond Technical-Vocational High School – career training had undergone a dramatic transformation. The birth of the Industrial Revolution and the explosion of factory jobs that followed greatly decreased the skills needed to be a productive worker. Just after World War II, Hammond students were training to work in the robust job market fueled by steel production in northwestern Indiana. While this provided a secure way to provide for one’s family, these jobs were largely based on the assembly line model, requiring a high amount of repetition and, too often, a relatively low skill level.

But in the 1970s and 1980s, the Rust Belt economy underwent a dramatic shift. Driven by advances in technology and automation, combined with lower labor costs in developing



Career Tech Video Control Room

countries, many factory jobs disappeared or were rendered obsolete. The shift in the local job market could be most readily seen in the fate of Hammond Technical-Vocational High School, which was closed in 1981 and transformed into the Hammond Area Career Center, a vocational training facility serving 10 area high schools.

More than a decade into the 21st century, a new program housed in the Hammond Area Career Center is attempting to once again redefine what it means to “hath a trade” and “hath an estate.” Opened in 2010, the school’s Multimedia Broadcast Academy is providing students with the skills

they need to grow and thrive in the new economy. This rapidly-growing program represents a new approach to career training within the district – one that is based on a different way of thinking about what it means to be a productive worker in the 21st century.

### A New Way of Planning

This specialized learning environment required a unique approach to school planning, especially in light of the Academy’s surroundings. The program is housed in a former automobile engine and auto body repair workshop within the Career Center. To effectively transform the space, the



Career Tech Radio Studio

planning and design team had to undertake an extensive review of cutting-edge Career-Technical trends, as well as an investigation into the qualities of an effective 21st century learning environment.

The process began with the visits to other radio, television and multimedia programs across the region. After the district and its planning team clearly defined the program and approach, several potential spaces within the Career Center were analyzed for their ability to accommodate a flexible, project-based learning environment.

During the analysis, members of the planning team placed a specific emphasis on those factors which have the greatest impact on teaching and learning. Far from being an exercise in implementing standard best practices, this process interrogated many existing assumptions related to research into effective instructional environments.

For example, while daylighting has become the pet strategy of many planners and architects – thanks to the success of the Heschong Mahone report – Hammond’s team drew from the research of Dr. Lance Roberts of the University of Manitoba to reprioritize environmental issues. In a presentation given to the International Union of Architects at the CEFPI World Conference in Toronto, Dr. Roberts stated that four factors that impact student achievement are, in rank order:

1. Thermal comfort
2. Indoor air quality
3. Visual comfort
4. Acoustics (Roberts, 2007)  
Using these criteria as a template

for the evaluation of existing spaces, the team was able to identify the automobile engine and auto body repair workshop as the ideal candidate for adaptive reuse.

In the same way, the development of the academy’s educational offerings ignored some long-held, yet erroneous, theories – mainly, the Learning Pyramid. Many a presentation has used the famous chart, which shows the information retention rates associated with different forms of instruction. The Pyramid states that lecture-style instruction results in a five percent information retention rate, the act of reading results in a 10 percent retention rate, etc. The Pyramid progresses all the way to the act of teaching others, which supposedly results in a 90 percent information retention rate.

However, while the Learning Pyramid has gained widespread notoriety, there is no evidence to support these findings. Even the NTL Institute, the organization to which this study is often credited, admits that it has no record of any published studies that support the Learning Pyramid.

Through their own research, educational facility planners understand that there is not one best way to teach students, but that learning environments should support a variety of teaching methods. This understanding helped to guide the planning of the Hammond Multimedia Broadcast Academy.

### Planning and Design for Multimedia Environments

While the planning process addressed a variety of broad topics related to educational best practices, there was also a specific focus on issues directly related to the Academy’s unique multimedia environment. Unlike those who make the case that environment does not matter, citing “glorified anecdotes” such as the Hawthorne Effect (Kolata, 1998), the planning team understood that many issues associated with multimedia learning environments have a very specific impact on student performance.

For example, acoustics is extremely important when sensitive radio and television production equipment is involved. As part of the analysis of potential space within the Hammond Area Career Center, an acoustical consultant performed a series of extensive studies. The district’s first choice was quickly ruled out, as it was located below a print shop and binding equipment.

The auto body workshop, which was ultimately selected as the home for the Multimedia Broadcast Academy, also presented several challenges. A nearby electrical sub-station was causing significant vibrations in the structure. In addition, its electromagnetic output would impair the performance of the equipment in the radio lab, which would share a wall with the sub-station room.

To solve these problems, the planning and design team recommended cutting a construction movement joint separating the second-floor mezzanine from the radio lab. In addition, the team added a lead-lined wall in the radio lab to protect the equipment from the impact of the electromagnetic signals and used LED lights rather than fluorescent lights, which would negatively impact radio signals.

### Design. Story. Symphony. Empathy. Play. Meaning.

In his 2006 book, “A Whole New Mind,” Daniel Pink identified six senses that he believes will guide our lives and shape our 21st century world: Design, Story, Symphony, Empathy, Play, and Meaning. Of these six senses he writes, “Many of you no doubt welcome such a change. But to some of you, this vision might seem dreadful... Fear not. The high-concept, high-touch abilities that now matter most are fundamentally human attributes.” (Pink, 2006)

The curriculum found in the Hammond Multimedia Broadcast Academy uses Pink’s six senses as its basis for educational delivery. Students are immersed in a project-based learning environment focused on the editing and production skills

needed to produce television and radio broadcasts as well as Internet and interactive media for webcasts, podcasts and digital productions.

To help students hone their skills in design and storytelling, the Broadcast Academy uses the latest multimedia editing and production equipment, including a TV studio with high-definition digital cameras and a professional-quality control room. Instructor Robert Love praised the tools that students have at their disposal. "It has the overhead projectors. It has the big widescreen TVs. It has the radio room that is probably better than most radio stations in America," he said. "The television studio itself—the lighting system that we have here is what Oprah uses in her studio. I teach the students how to use the lighting equipment here and they have the opportunity for employment at that level."

Developed as a highly flexible learning environment, the Academy encourages students to engage each other in the "play" of ideas and to develop empathy and respect for their peers' talents. One of the highlights of the space is a central project room called a LearnLab. The LearnLab's X-shaped table configuration and triangulation of projection removes the need for the typical lecture-style approach to instruction. Students can sit in small groups and see each other's faces, while also viewing whatever material is projected on the screen.

A first-year teacher who came to Hammond Multimedia Broadcast Academy after more than 25 years as a videographer for a local affiliate of CBS News, Mr. Love credits the flexible environment with easing his transition. "The building is laid out so well for me to teach in," he said. "And as a first year teacher, it made it easier for me to instruct these students."

Other highlights of the Academy include an open and transparent floor plan with a central seating area for group discussions. A project room, renamed the "War Room," includes a Steelcase® media:scape system. The system allows students to display

projects and share control of information presented with multiple classmates. In this way, students learn from one another, growing together in a symphony of shared exploration.

As one of their first assignments in the 2010-2011 School Year, students took video footage of the tragic shooting in Tucson, Arizona, and created their own newscast chronicling the events. In this environment, students are not envisioning their future as cogs in an assembly line process. Instead, they are becoming modern day storytellers, focused on creating original content that shapes the world around them.

### From the 1940s to the 21st Century

When the Academy opened for the 2010-2011 School Year, the former 70-year-old vocational learning environment had been transformed into a modern facility for project-based instruction. The reaction among students and teachers was immediate.

"I wish I would have had my camera set up on the first day and watched the students' faces as they walked into the classroom," says Robert Love. "They were all saying, 'Wow, Mr. Love. We never expected anything like this. I'm going to tell my friends so they'll come here too.' They were really excited...this was something special to them."

In its first year of operation, the new program attracted more than 20 students. As the Hammond Multimedia Broadcast Academy enters its second year, that number has already doubled. In fact, the Career Center is already placing students on a waiting list due to an overwhelming level of interest.

The success of the program suggests a different way to think about education in America. Taking a cue from the documents prepared by our Founding Fathers, we must provide students with new tools for the development of life, liberty and the pursuit of happiness.

But perhaps this viewpoint is not so new. More than 200 years before Daniel Pink published "A Whole New



Career Tech War Room

Mind," John Adams echoed similar sentiments regarding the importance of higher level thinking skills in the continually-evolving realm of education. In a letter to his wife Abigail Adams, he wrote, "I must study politics and war that my sons may have liberty to study mathematics and philosophy. My sons ought to study mathematics and philosophy...in order to give their children a right to study painting, poetry, music, architecture, statuary, tapestry, and porcelain." ■

**Greg Monberg**, AIA, REFP, LEED AP BD+C  
Greg Monberg served as project designer for the Multimedia Broadcast Academy. He is a principal with Fanning Howey and has focused on school design for more than 17 years. Greg is an active member of CEFPI, and recently volunteered for the Haiti Relief Task Force sponsored by CEFPI and Schools for Children of the World. His recent projects include the award-winning Harding Elementary School in Hammond, Indiana, and the new Greater Gentilly High School, one of five "Quick Start" schools constructed as part of the rebuilding efforts in New Orleans.

**Riyad Bannourah** served as technology designer for the Multimedia Broadcast Academy. He has more than 30 years experience in the technology design industry, with the last 14 spent focusing solely on school facilities. Riyad has presented new trends in technology design at conferences for CEFPI, the Michigan Institute for Educational Management, and for E-School in Washington, DC, and has contributed to multiple articles on safety and security issues in schools. Recently, Riyad directed technology design for the new V. Sue Cleveland High School in Rio Rancho, New Mexico, a 2010 James D. MacConnell Award Finalist.