the legacy project

M. James Bensen

BY JOHNNY J MOYE

Many vocational education, technology education, and now technology and engineering education leaders have made their mark on our profession. Their legacy is something that members of the profession enjoy and have the responsibility to continue to build upon.

This is the sixth in a series of articles entitled The Legacy Project that focus on the lives and actions of leaders who have forged our profession into what it is today. Members of the profession owe a debt of gratitude to these leaders. One simple way to demonstrate that gratitude is to recognize these leaders and some of their accomplishments. The focus in this issue will be on Dr. M. James Bensen.

"*The Legacy Project focuses on the lives and actions of leaders who have forged our profession into what it is today.*"

Dr. M. James Bensen

Degrees held:

- B.S. Industrial Education, Bemidji State University
- M.S. Industrial Education, Stout State University
- Ed.D. Educational Leadership, The Pennsylvania State University

Occupational History:

- Erskine High School, Erskine, Minnesota; Teacher and Coach
- Osseo Schools, Osseo, Minnesota; Teacher
- University of Wisconsin-Stout; Professor, Director of Technology Education, and Dean
- Dunwoody College of Technology; President
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You were a part of the great legacy at Stout State University, (later called the University of Wisconsin-Stout), when industrial arts and technology education were a big part of the whole campus. What happened in the history of Stout to create the legacy, and how has it continued?

Founding. UW-Stout was founded by James Huff Stout, co-owner at that time of the largest lumber company in the world, world traveler, politician, and man of great foresight. It should be pointed out that the Knapp, Stout & Co., Co., (two "Co"s, because two of the owners of the corporation sought to remain as silent partners), was founded prior to the establishment of Minneapolis and St. Paul, Minnesota.

In the late 1880s, Mr. Stout established the Stout Institute in the woods of Northern Wisconsin to prepare teachers for "Domestic Science, Manual Training, Kindergarten, and Physical Culture." The early campus included classrooms, laboratories, an elegant theater, shops, athletic facilities, and a natatorium, (housing an indoor swimming pool, a second story leather-based running track, etc.)

As a private institution, the Stout Institute quickly assumed a worldwide status of excellence and provided leadership in the profession. When Mr. Stout died, his heirs deeded the institution to the State of Wisconsin, and it became a public higher education institution.

Arrival at Stout. As time progressed, through campus leadership the programs in Home Economics and Industrial Education became dominant. Each was the major focus of two large schools on campus, along with a School of Liberal Studies and the Graduate College. I had earned my master's degree at Stout and was at Penn State completing my doctorate when I received an offer to join the faculty in 1966.

Upon arrival on campus, I taught professional teacher education courses at the undergraduate and graduate level in curriculum development, instructional design, teaching methods, research, statistics, the future, and philosophy, etc.

After three years in this assignment, I received a call from the President's Office asking me to stop in and visit with Dr. Micheals. He told me that the students at Stout had voted me their Distinguished Professor, an award given each year as determined by the student body! It was gratifying to learn that what I had such a passion for was also recognized for excellence.

Ironically, a week later, Dean Anderson of the School of Applied Science and Technology, requested that I take on an administrative leadership role in the school, which would limit my teaching to one course each term. He related that he wanted me to take on the Program Director of the B.S. Degree in Industrial Education. At that time this program had over 1,200 declared majors.

The intentional separation of leadership between "programs" and "departments." A Program Director at Stout was in a key position to initiate change. The "director," though holding tenure and professorial rank in an academic department, did not report to a department head regarding a "director assignment," but rather reported directly to the Dean of the School. The program director established an advisory committee with representation from both on and off campus and was responsible for marketing, recruiting, program design, ensuring that appropriate instruction was provided by the departments, program evaluation and accreditation, and worked closely with placement.

Program directors also were expected to be exceptionally well connected to their field of study; hence, over forty years, I started a habit of visiting companies and continue to do so today. The program directors and department chairs met every week in the Dean's School Council to conduct academic affairs in research, service, and instruction.

Influence of Technology Education on "Industrial Technology" program development. This was also the time of the "invention" of degree work in Industrial Technology, which, early on, removed the professional education courses from the teacher education program and replaced them with business, management, and supervision requirements. This program exploded overnight at Stout and soon became the largest program on campus. Several "concentrations" were built into this program in such areas as manufacturing, construction, synthetics, packaging, graphic arts management, distribution/logistics, etc.

Campus Leadership. While I was serving as director of the largest program on campus, I was appointed Associate Dean of the School of Industry and Technology and served with Dean Herb Anderson for a number of years in establishing a wide array of innovations in higher education. I continued to teach one class each term throughout my career, and new talent was needed to provide leadership for the Technology Education Program. In 1980 I was appointed Dean of the School of Industry and Technology and instituted a "servant leadership" model to accelerate the fostering of ideas and increasing the speed of implementing innovations.

Futures. Among several effective innovations at Stout, we developed a "certificate" in Futures Studies. These five three-credit courses were instrumental in keeping the concept of "planning FROM the future" an integral part of the university. We had an on-campus Futures Group, belonged to Minnesota Futures, and were members of the World Future Society. The "futures initiative" served Stout well in anticipating opportunities and delivering new programs, research centers, collaborative experiential education, international involvements, etc. before most other universities moved in that direction.

Research and Development. When named the Dean of the School of Industry and Technology in 1980, I and my colleagues set about to drive the school hard into new leadership opportunities. The student body was large, close to 4,000 undergraduates, there were many graduate programs, and then we built seven research and development centers, some with multimillion-dollar projects. Within the six buildings housing the laboratories was the first on-campus "incubator/accelerator" in the nation to host entrepreneurs and innovators.

This research and development focus grew rapidly into a 114-acre Stout Technology Park that quickly filled up with companies, and it has since been expanded two additional times into a 304-acre innovative environment.

You were around when the profession moved from industrial arts to technology education. What was it like during those times at the university level? What were the discussions, concerns, and opportunities?

The dynamics. The American Industry Project at UW-Stout was a large research project that had gained international attention. The project was supported by extramural funding; it supported about fifteen full-time faculty, workshops, student teaching centers, and drew people from all over the country who were interested in the development.

While the American Industry Program was attracting significant attention, it was not all that welcomed by many of the more "traditional" faculty who, individually, were highly skilled people teaching technical courses in their specialty at advanced levels of expertise and who had spent many years of their lives attaining their status. The laboratories were designed to fit these unique requirements.

This was also a time of incredibly rapid growth of the student body at Stout, as it went from less than 3,000 students to more than double its size in just a few short years.

An opportunity for dramatic change. When Dean Herb Anderson visited with me about taking over the program director's position, he related that both the huge Industrial Education and the research-oriented American Industry programs needed program directors, and I had my choice. I suggested that he appoint me to the Industrial Education Program, put in place an interim program director for the American Industry Program to work with me, and at the end of one year, we would completely redesign the curriculums of both programs into one of "innovation." Two days later, he said, "Go for it, you are responsible to pull it off!"

The process. A member of the American Industry research faculty was appointed to work with me on an interim basis to review the elements of both programs and design the new one.

We used the Program Advisory Committee, made up of leading executives, researchers, innovative faculty, and school leaders to provide direction in our work. We took the American Industry "societal adaptive systems" and combined them with contemporary technological systems (not disciplines), and the new program was approved as Technology Education.

The outcome. The old wood/metal/drafting/etc. set of "basic" courses was dropped, and a new set was established around such areas as materials/processes/energy/communication/transportation, etc. This change at Stout was truly massive, as it took 22 sections of each of the new courses to be offered to meet the requirements of the degree! This meant new course curriculum, retraining faculty, retooled laboratories. The second and advanced level courses took on titles like manufacturing systems, communication systems, construction systems, etc. and continued with their "open-endedness" and focus on design, problem solving, and research and development.

A side benefit. The Industrial Technology Program also soon utilized the same basic set of courses that required a complete overhaul of the technology labs in the School of Industry and Technology. These labs were located in six different buildings and delivered courses for thousands of students in majors across the campus.

Leaving Stout. I left UW-Stout in 1989 to assume the President's position at the Dunwoody College of Technology. Though I was employed by another institution, I continued a close relationship with Stout and actually "Chaired the Board" that founded the Stout Technology Park. In 1994, I was appointed President of Bemidji State University, and because of the extended distance from Stout, I was not able to continue a working relationship with the institution. I retired from Bemidji State in 2001. In my role as President Emeritus, I continue to support STEM programs through speaking, consulting, and writing.

Conditions of technology education today at the University of Wisconsin-Stout. Technology-related teacher education programs across the nation have shrunk in size, and this is true at Stout. The campus has reorganized its academic units and taken on the focus as "Wisconsin's Polytechnic University," and preparing teachers, while important, has taken on a smaller scale and role.

You were on AIAA's and ITEA's Board of Directors on three different occasions when you represented the American Council for Industrial Arts Teacher Education, (ACIATE), American Council on Industrial Arts State Associations, (ACIASA), and then as ITEA President. What issues were of importance to the councils, association, and the profession at that time? What did you try to accomplish as President?

A significant issue. During these times there was a rush to maintain relevancy of the profession and to seek better understanding and support for technology programs in our schools. This was a huge challenge at the time and continues today. During my three elections to the AIAA/ITEA Board, we struggled internally with viability of the association, and this was strengthened significantly by the appointment of Dr. Starkweather as the Executive Director. While the financial integrity of the association was stabilized to some degree, it was a continuing "attention getter" of the Board to build both the social and the financial assets of the organization.

Early attempts to move from industrial arts to technology education. AIAA Councils, state associations, "innovative curriculum projects," and specific teacher education programs, served well as a forum to bring about relevance for the move to rename the association. The Wisconsin Technology Education Association and the Technology Education undergraduate and graduate programs at "Stout State" were among the first to make this leadership move.

The Mississippi Valley Industrial Education Conference. One of the historical elements of our profession, taking place over decades of development, was the Mississippi Valley Industrial Education Conference. Each institution of higher education that was located within the watershed of the Mississippi River and had an industrial arts teacher education program was invited to forward its leader (Department Chair, Dean, etc.) to represent the institution. The conference met annually to present papers, debate issues, and challenge ideas. I found myself a guest of Dean Anderson, representing Stout one year, and I presented a paper on redesigning our field. It was a first for the conference to have a "nonrepresenting" member do so and eventually broke the mold of outsiders making presentations at the conference.

Rupert Evans, before stepping down as chair of the conference, told the membership to look around the room at the large number of institutions representing teacher education programs. He then projected that, in a decade, fewer than half of the institutions would have programs and thus would not be attending the conference. There was an element of shock by those who heard the pronouncement, yet Dr. Evans turned out to be accurate in his statement.

Epsilon Pi Tau. The honorary society of those whose field of practice was in technology supported the move to technology education through initiating research, scholarships, recognition, and another venue for publication of refereed papers. The force behind EPT came from the scholars' perspective and contributed to the pursuit of excellence.

Jackson's Mill. One of the most significant "integrators" of collaboration for change came when a group of leaders, representing AIAA/ITEA, state associations, universities, etc., met and created a platform that most could accept, and charted a course for the future. Under the chairpersonship of Snyder and Hales, the discussions continued over several years, with projects and activities that contributed to solidifying the profession's direction for the future.

American Association for the Advancement of Science. AAAS and ITEA teamed up to examine the content for these broad fields and determine where "technology" fit into the scheme of things in relationship to science. Several subgroups were established, composed of leaders from business, industry, education, and scientific and technological organizations to frame the issues and make recommendations. I was fortunate to participate in the Technology Group, led by Dr. Jim Johnson, 3M Executive Scientist. Jim understood well the difference between science and technology and greatly assisted in the discussions to place technology on par with science with the AAAS.

The Standards Project. Of prime importance and carrying a significant impact for the profession was the ITEA [Technology for All Americans] standards project. Initially chaired by Dr. Bill Dugger and involving many leaders in the profession, this project provided an advanced, research-based approach to build the profession. The impact continues today and is recognized throughout the world for its excellence.

The International Technology Education Association. In the end, ITEA served to provide the support, platform for change, and the leadership to bring change to fruition, and the rest is history! Moves to build relationships between the AAAS, NASA, and a whole "host" of collaborations provided the impetus for excellence and charted the course for the future.

Over time the association (AIAA, then ITEA, and on to ITEEA) has been the prominent worldwide force in leading the profession and strengthening the field of technology and engineering education. Leaders by the hundreds contributed their time, energy, and expertise to the association, and each in their own way made their mark. Over my professional life, I had the opportunity to work with these people and have benefited immensely from the experiences. In due respect to all the talent these leaders had, and to the contributions they made, one stands out as the "leader of leaders," and that is Kendall Starkweather. As a young professor on the rise at the University of Maryland, AIAA was able to engage him as our Executive Director, and over decades of relentless professionalism and entrepreneurship, he made the difference that we marvel at today.

Mystique of Engineering. In 1966, during the summer session at Stout State University, I was teaching a graduate course in curriculum theory and posed a question to the graduate students in the class: "What difference, today, would we be experiencing in our industrial arts programs if we had identified with the field of engineering when the Smith-Hughes Act was passed?" This was to contrast the established profession of engineering rather than the field focusing on wood-metal-drawing, etc., as a general education foundation. I related that engineering at that time was very "hands-on" and that our courses might have been Mechanical/Electrical/Civil/etc. The consensus was that we would be embraced by society in a way that we couldn't even imagine in both support and resources for our programs.

Years later my son, Ted, (now a Cross Media Management Program Director at UW-Stout) and I presented a paper at the ITEA International Conference on this very topic and experienced a spirited discussion on the merits of our proposal. It is noted that engineering can be viewed as both a noun and a verb. In the first sense, courses take on the discipline structure, (mechanical/electrical/civil/chemical/ biological/etc.); and when it is a verb, the structure takes a "systems approach" in program development, resulting in a different experience for our students. (communication systems/transportation systems/production systems/biological systems/etc.). While both are engineering, the approach of systems proves to hold the most promise for the well-being of our society.

It is heartening to see the emergence of engineering as an integral part of the profession and to be included with math and science as an integral part of today's STEM movement. There continues, however, to be a lack of understanding of STEM on the part of society, as most still see it dominated by math and science, with little support for technology and engineering (e.g., requiring 12 years of math and science instruction in many schools but only one semester of engineering and technology at the middle school level).

One of the premiere curriculum projects of the 60s was the American Industry Project. You were active in curriculum work during those times. What was the major content thrust of the project, and how did it fit in with the other projects being promoted during those times?

The context for curriculum change. It was recognized that program change in the field was in great need as we moved through the decade of the 1950s and entered the 1960s. The current basic courses being taught actually were extensions of manual training programs from the turn of the century, and relevance was becoming a huge issue. The philosophical perspectives of John Dewey, Charles A. Richards, Frederick Bonsor, and Lois Mossman, etc., were relevant and challenging early curriculum foundations, yet the programs of the fifties were more focused on the "trades" and had not changed much for half a century. There were "sparks" of excellence being experimented with, but the major focus was still on teaching hand skills of a bygone era. "Craftsmanship" was king!

American Industry Project leadership. The need for change was recognized and positively responded to. Almost overnight, there were dozens of curriculum projects underway during this period. Some of them were designed and driven by a key leader (Don Maley, University of Maryland; the Systems Approach, by Lou Yoho, of Indiana State, etc.). The American Industry Project at Stout and the Industrial Arts Curriculum Project at Ohio State were the two largest and most thoroughly developed "innovations" to a new approach to the field. Both of these programs had a theoretical framework from which they were designed; hence, the programs were presented as a "unified whole" in how they fit into the context of the world.

The Basic Philosophy of the American Industry Project. There were three major aspects that provided a framework for the research project:

- American industry proposes to study the knowledge (concepts) necessary to understand industry for general education purposes and to provide a foundation for future technical training.
- American industry proposes to identify a structure composed of underlying concepts that would make possible a national curriculum and standardize laboratory facilities.
- Concepts serve as the orientation for the course of study. Specific skills are introduced as they become necessary in activities designed for development of the concept.

Theoretical foundation. The American Industry Project was designed around the sociological "Adaptive System" of economics—industry (See Jackson's Mill Curriculum Model on "Ideological-Sociological-Technological Systems"). American Industry was also designed using a conceptual approach in that the concepts were taught via the laboratory, and inferences were drawn from the "experiential learning" into higher-order learning. A massive study was made of each of the 13 major concepts that make up industry, and each of these concepts was structured into several sublevels. This framework of industry was validated worldwide as complete and accurate.

- The Thirteen First-Order Concepts of American Industry:

Communications	Finance
Transportation	Property
Processes	Procurement
Materials	Research
Production	Relationships
Management	Energy
Marketing	

- The "Environment" that the Concepts operate within are:

Government	Resources
Public Interest	Competition
Private Property	

A complex perspective. A unique element of the American Industry Project was that the "whole" of the 13 major concepts that make up the world of the sociological adaptive system of industry operated within the "environment" of the world in which it existed. Hence, in America, the 13 concepts operated *governmentally,* within a *free enterprise environment,* but the 13 concepts that make up industry in another environment, e.g., collective state, authoritarian, etc., were still valid and were only impacted as to how they functioned by their *environment*. The same would be true in the other environmental sectors, as the 13 concepts would be impacted by the unique *resources, competition, public interest, and the extent of private property*.

An Achilles heel. One of the significant drawbacks of the American Industry Project was its intent to teach conceptually, through the use of experiential learning. The theory of such an approach was powerful, yet traditional teachers had great difficulty with it. The courses in the programs were taught in laboratories, shops, design studios, etc., and yet, when teachers came to complex concepts, they would frequently revert back to "telling" rather than designing laboratory activities for their students to experience.

A missed opportunity. Today, there is a call worldwide to bring about the development of entrepreneurs, creative developers, inventors, designers, and people to build our economy. Many of the experiences in the American Industry Project particularly focused on this "call," as students determined people's needs, formed companies, conducted market studies, initiated research and development, designed products or services and produced them. These were rich programs for their time, yet were not recognized as to how far-reaching they were in both their scope and relevance.

A personal perspective. The American Industry Project was ahead of its time by about fifty years for the traditional industrial arts teacher. In actuality, it was right on the money of meeting the needs of its time. Yet, the profession found itself handcuffed in its ability to really understand the significance of the program and the far-reaching impact that it could have on society.

Like so many changes that come about in society, the old guard sees opportunities through the lens of the past, rather than the prospects of an anticipated future. The approaches to teaching our historical programs were "the teacher demonstrated and the student imitated." The closer the student could perform to the standards of the teacher, the more success he or she had in the program. Even problem solving is focused on *current problems* and, hence, addresses the needs of the present.

A valid and relevant program of the future *that can participate in and contribute to* the issues of tomorrow requires extensive experiences in research, development, design, experimentation, innovation, and entrepreneurship! *Programs must be anticipatory, not reactionary.* Technology and engineering provide the promise to utilize the future as their focus and thus *"make the future our friend!"*

Thanks to Dr. Bensen for providing us with some history of our profession and his legacy. The Legacy Project has now interviewed six leaders who were very influential to the technology and engineering education profession. It is very beneficial to current (and future) leaders to read about the issues that existed and how they were addressed "back in the day." In a few months, the next interview will appear in this journal. If you have a suggestion of a leader to recognize, contact the author with that person's name and contact information.

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