

From Ideas to Fruition – External Funding and Its Impact on Technology

Education

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The genesis for technology education today throughout the world is often traced to the foresight of a select few individuals who believed there was a need for a new area of study within the school curriculum. Some of the individuals who provided the initial major impetus for technology education worked in isolation from their colleagues, while others worked in tandem. Regardless of their sometime unique, often cumbersome, and even unorthodox approaches to bring about change, however, great progress has been made in the last 20 years throughout the world by a host of individuals and organizations who sought to further the goals of technology education.

In the United States, one organization that has made a very significant impact on the advancement of technology education is the Technical Foundation of America. Since its inception, the foundation has funded several hundred projects that advanced the goals of education programs in the United States and throughout the world. Many of these funded projects were in technology education.

During the early years of the foundation's existence, grant seekers sought funds to develop new curricula. The curricula often reflected individuals' best thinking of the time in what technology education was suppose to look and be like throughout the remainder of the 20th century. Later, as the profession's members became more accustomed and even sophisticated in teaching technology, the foundation hosted symposia that brought together leaders in the field to discuss and often debate issues associated with the different movements taking place in technology education. In addition, the foundation

hosted leadership conferences, retreats for leaders of professional organizations, and “comparative” issues conferences; and it helped establish a technology education center at a major university. And, while all of these activities were occurring, the foundation funded proposals that represented the special research interests of technology education faculty in the United States and abroad.

The world has changed throughout the past 20 years and change is no more apparent than in the different types of grant proposals the foundation receives today as compared to that which it received 10 to 20 years ago. Change, for example, is evident in (a) the number of proposals it receives each year requesting funding; (b) the quality of the proposals; (c) the subject matter emphasis of the proposals; and (d) the creative nature of the content and methodology of the proposals. Today, for whatever reason, technology educators are less aggressive in seeking grant funds. Maybe the lack of grant seeking activity is a reflection of the declining number of technology educators and the declining number of technology education programs in the United States; and maybe it’s a reflection of the greater societal demands being placed on individuals within the teaching profession. It is the premise of this paper that the major events in technology education in the United States over the past 20 years closely parallel the grant and program funding patterns of the foundation. The goal, therefore, is to identify and describe a select few of these grants and programs.

Mission

How does the foundation establish priorities when deciding where to focus its resources to further the goals of the technology education profession? What is the procedure for applying for a grant? And, what is the process by which decisions are made

on which proposals are funded and which proposals are not funded? Before any one of these three questions may be answered, however, the foundation's mission must first be explored. The mission of the foundation is as follows: "The foundation exists to effect change in technology education; serve as an advocate for the profession; and act as a catalyst to generate ideas, identify issues, and stimulate critical thinking." The overriding principles in the mission statement are in the action words of "effect change," "advocate," "catalyst," "identify," and "stimulate." These principles have guided the foundation since its inception when making funding decisions for all of its grants and programs.

Establishing Priorities. As it relates to the first question, every 12 to 18 months, the foundation brings together a group of leaders (classroom teachers, supervisors, and teacher educators) in the profession who serve as an advisory group. In their advisory capacity, the participants discuss with the foundation's trustees (a) the direction they foresee the profession moving over the next decade, (b) identify targets of opportunity the foundation should consider, and (c) suggest possible programs that should be conducted.

Application. The procedure to apply for a grant is rather simple, at least when compared to other philanthropic foundations. Grant guidelines require the grant seeker to provide an executive summary with accompanying details that address a documented need for the project and, of course, a budget. Above all else, however, the proposal must document that the proposed activity supports the foundation's mission.

Review Process. As it relates to the third question, each year the foundation sends copies of the proposals it receives to an independent jury of professional educators in the field. Jury members work independently of one another throughout the proposal review

process. Jury members identify the strengths and weaknesses of each proposal and inform the foundation whether a proposal meets the foundation's mission.

Curriculum Development Initiatives

One of the earliest projects (*circa* 1980) that received funding from the foundation was the Jackson's Mill Industrial Arts Curriculum Theory project. In the United States, many people in the profession regard the Jackson's Mill project as the major and most significant event that gave birth to "modern" day technology education. The Project's organizers (James Hales and James Snyder of West Virginia) incorporated a modified Delphi technique to select its participants, who represented classroom teachers, supervisors, teacher educators, and professional organization executives. The participants were widely recognized as a Who's Who in technology education in the United States.

As originally conceived by the Jackson's Mill project organizers, participants were to attend a series of meetings with an open mind and with an infectious desire and spirit to bring about significant and meaningful change in the profession. The organizers believed, and the belief was shared by the participants, that the profession had become stagnant and that it needed a new focus and a new direction if it was ever to have a major impact on education throughout the remaining years of the 20th century. Some people in the profession at the time feared that the profession would not survive unless meaningful and purposeful change occurred.

The Jackson's Mill project provided just what the profession needed. The outcomes of the Project were timely and they were printed in paperback and distributed nationally and internationally. The paperback went through several reprints as it was a very popular piece of scholarly literature. The paperback was used by faculty and

students in almost every undergraduate and graduate professional education class in the United States. During the 1980s, the Project was probably the most often quoted document in the profession's literature and it is still quoted even today; and it was a topic of discussion at almost every professional meeting of technology educators. The foundation provided the Project's organizers funds to host some of their meetings. The foundation's trustees believed, like the Project's organizers, that significant and meaningful change needed to occur in the profession if teaching technology was to ever become a reality in the schools of the United States.

A major curriculum effort funded from 1982 to 1984 was the Industry and Technology Education Curriculum Development project. Nationally, the project was designed to extend the work of the Jackson's Mill project and it was the first major curriculum development effort by technology educators in the United States immediately following the Jackson's Mill project. The project's investigators (R. Thomas Wright of Ball State University and Leonard Sterry of the University of Wisconsin-Stout) developed a guide that contained technology education program structures for small-, medium-, and large-sized schools. It was the profession's first attempt at identifying technology education for school enrollments of all sizes. The guide also included course outlines for the various course content offerings. Several hundred guides were printed and made available to technology educators. The guide was used by key school stakeholders throughout the 1980s.

Another initiative funded by the foundation that was also a follow up to the Jackson's Mill project resulted in a project and publication entitled *A Conceptual Framework for Technology Education*. Among the many topics covered in the

publication was a description of the technological method. The publication covered bio-related, communication, production, and transportation technologies. Today, the publication is available through the International Technology Education Association.

Center for Industrial Technology Education

The foundation assisted Ball State University in establishing its Center for Industrial Technology Education (CITE) in the mid-1980s. The CITE project, funded over a five year time period, developed a series of technology education activity packets that assisted classroom teachers in making the transition from industrial arts to technology education. Each packet contained 10 activities that were deemed appropriate for students in the 6th through 12th grades. Several hundred packets were developed by the CITE project team. Today, the packets continue to be distributed in limited quantities by the International Technology Education Association.

Professional Association Initiatives

The lifeblood of any profession is often the role that professional associations serve in meeting the goals, ideals, and ambitions of its members. Since 1980, the foundation has contributed funds to several different professional associations. In the early years, for example, some organizations needed funds just to sustain themselves as the size of their memberships was small; while others sought funds to carry out new and/or innovative projects that would further the goals of their associations. Arguably, some associations would not be in existence today if the foundation had not provided funds during a critical time of need. The foundation has provided funds to assist associations in supporting and conducting membership drives, hosting in-service workshops, establishing and supporting advisory councils, hosting strategic planning

sessions, hosting major conferences, underwriting costs associated with conference speakers, supporting students to attend and participate in conferences, developing leadership development kits, conducting public relations campaigns, hosting teleconferences, conducting demonstration projects, hosting roundtables, developing professional improvement plans, developing competitive events guides, supporting teacher recruitment, videotaping interviews of technology education leaders, and supporting program enhancements. Associations that have benefited directly from the foundation's philanthropy include the International Technology Education Association, the Technology Student Association, the Technology Education Collegiate Association, over 30 state technology education associations in the United States, World Council of Associations for Technology Education, SkillsUSA – VICA, the National Association of Industrial and Technical Teacher Education, and the National Association of Trade and Industrial Education.

Professional Development Conferences

Starting in the late 1970s and moving through the mid-1980s, a series of technology education symposia were held in various locations throughout the United States. Often, but not always, each symposium was hosted by a university that also had a technology education department and faculty. The symposia provided a forum that could not be provided by any of the professional organizations and the symposia were conducted so they would not be in conflict with the annual meetings of the professional associations. While each symposium had a rather unique theme and accompanying program, a symposium's format provided a platform that allowed and encouraged an open discussion of ideas related to designing, developing, and implementing technology

education. Participants exited the symposia with new knowledge, new skills, and new dispositions about the role of technology education in schools. Several of the symposia that were funded by the foundation included those hosted by University of Wisconsin-Stout, Ball State University, Illinois State University, The Ohio State University, and Northern Illinois University.

Throughout its existence, the foundation hosted a number of seminars and conferences that focused on topics that were deemed critical to the technology education profession at the time and they were topics that needed to be addressed by a representative population of the profession's members. In the early 1980s, for example, the theme for one of the conferences was, "Are We Prepared for a Technological Future." In the early 1990s, the foundation demonstrated its support to the profession by hosting a group of national and international leaders in technology education in a series of critical issues conferences. In 2003, the foundation co-hosted a conference with Griffith University (Australia) that focused on comparative initiatives in technology education between Australia and the United States. Prior to any of these conferences, however, the foundation would bring together a group of technology education leaders to develop the conferences' programs. It was another way the foundation demonstrated to the profession that it wanted the profession's members and not the foundation to establish the conferences' agendas.

One of the most widely acclaimed foundation-sponsored issues' conferences was held in Scottsdale, Arizona in the early 1990s. This conference became known as the Camelback Symposium because it was held in a conference facility that was located at the base of Camelback Mountain. Camelback Symposium papers were printed in a

softbound book and the book was widely distributed throughout the profession by the International Technology Education Association. More important than a published book, however, was the message that the Camelback Symposium communicated to the profession: a research base and research agenda needed to be established by the profession's members before the profession could ever expect to make a meaningful impact in schools. The Camelback Symposium helped to plant a seed for the nationally and internationally acclaimed Technology for All Americans project of the 1990s.

Participants

Throughout its existence, the foundation has made every effort to reach out to technology educators at all levels of education while recognizing the unique positions they hold in their local school environments. Technology education classroom teachers have benefited directly from the foundation's program of work. The foundation's funded curriculum efforts of the 1980s and 1990s later became part of the content for the study of technology in many elementary and secondary schools throughout the United States. Classroom teachers, supervisors, and teacher educators are considered as equals by the foundation and each has benefited immensely from the foundation's program of work. In the late 1990s and on two different occasions, for example, the foundation hosted study abroad programs for technology education classroom teachers. These teachers, along with a mentor from each of their states, were invited to participate in a study abroad program in the United Kingdom to learn about design and technology. The study abroad programs were hosted by the Centre for Design and Technology Education at the University of Wolverhampton. Today, many of these classroom teachers have incorporated design and technology into their school's curriculum; and on an annual basis, several of these same

classroom teachers attend International Technology Education Association and state level conferences and give presentations on what they are doing in the classroom as a result of studying design and technology in the United Kingdom. The content and instructional strategies learned in the United Kingdom have impacted technology education, including classroom teachers and their students, in selected technology education programs throughout the United States.

Research Initiatives

In addition to developing new curricula and providing support for hosting conferences, symposia, and seminars, the foundation funded several research proposals that were emanating from the work of a select group of technology teacher educators in the United States and abroad. Regretfully, however, the “flow” of research proposals submitted to the foundation has been limited and each year the number of research proposals the foundation receives continues to decline. For whatever reason, it does not appear that the technology education profession has established research as an important part of its agenda. Successful research grant seekers have focused their energies on the following topics: measuring student competencies in technology education; development of exit examinations; developing assessment criteria for technology teacher education; identifying criteria for hiring first-time technology education teachers; stimulating continuing research; identifying the processes of a technologist; learning effects of modular curriculum design; technology education status studies; and using cognitive holding power concepts and activity theory to develop student thinking in technology education. Within just the past few years, the foundation funded a project at Illinois State

University that encourages undergraduates to become active in conducting research and seeking grants.

Retrospect and Prospect

Technology education has undergone many changes over the past 20 years. Many of these changes were initiated by individuals while other changes were initiated by professional associations and organizations. The Technical Foundation of America, through its funding of grants and programs, has served as an advocate and catalyst to effect change. Its efforts have helped the profession's members generate ideas, identify issues, and stimulate critical thinking on a range of topics. Arguably, its impact has been significant and long lasting. Fortunately, over the past 20 years, other organizations and agencies have also stepped to the forefront to assist the technology education profession. Most noticeably among these groups have been the National Science Foundation and the National Aeronautics and Space Administration.

In retrospect, there have been several defining moments in the history of technology education over the past 20 years. Arguably, not one of these moments appears to be more important than the critical role philanthropy has played in providing funding for worthy projects and programs. If a mosaic of technology education's future was to be created, it would surely include philanthropic organizations as one of the key stakeholders. In prospect, philanthropy will play an even greater role in technology education's future by assisting individuals and associations in bringing about purposeful and meaningful change. More important, however, future initiatives in technology education will be influenced by the grant seeking motivations and ambitions of the profession's members.