



Chapter 8 – Organizing and Managing a Technology and Engineering Program

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1. — Introduction

“Even the best laid plans can go astray!” To be sure, but when they do it is most

often a problem with organization, management and follow-up. Typically, the TE instructor’s ideas are sound and well-founded—but, if when problems arise, it is his/her action or follow-through that is lacking—and often not due to any personal failing but rather because of a lack of support. Consequently, this chapter’s intent is to help TE instructors organize and manage programs more effectively. As such, this chapter shares the collective experience of the profession’s best practitioners.

To this end, this chapter’s main parts present guidelines to help find and make effective use of key resource people, to use available support systems, to use advisory committees to achieve the TE program’s goals, and to organize and manage the program better. Properly organized and managed, these resources will help students achieve more—and with less strain on your part.

2 — Accessing Key Resource Personnel

It is impossible for anyone to be all things to all people. This is especially true in the world of technology with its exponential rate of growth and change. Therefore the TE teacher must be aware of key resource personnel who are available to offer assistance. Typically nine categories of resource people are used most often.

- ◆ Local school and school system personnel

Supervisors	Principals
Superintendents	Counselors
Specialized. Teachers	Vocational Resource Person
Peer Teachers	

- ◆ Other local, state and national members of the profession
- ◆ University faculty
- ◆ Department of Elementary and Secondary Education (DESE) personnel
- ◆ Other Missouri state departments/divisions in related areas, e.g., the Departments of Health and Human Services, Economic Development and the like
- ◆ Educational association/staff members
- ◆ State and national special focus groups
- ◆ Individuals employed in technology (business & industry)
- ◆ Professionals in the community

DESE Personnel

The Missouri Department of Elementary and Secondary Education (DESE), also offers a great deal of assistance. DESE staff have a wide range of contacts with other schools, both within the state and beyond it. Questions about what to teach, with what methods and how well these methods work are most appropriate for them to field as are questions about what is happening elsewhere.

University Faculty

Similarly, the state colleges and state universities (as listed in Figure 8-1) all provide excellent sources of information. Technology personnel within these institutions have wide experiences with all types of technology and programs. Their faculty have diverse backgrounds, considerable professional involvement and they often conduct research in areas of special interest on a regular basis. They frequently offer

seminars, courses, workshops and many types of in-service programs. Figure 8-1 lists the names of colleges and universities in Missouri, along with department titles, addresses and phone numbers. Universities in other states are found in the Industrial Teacher Education Directory.

Figure 8-1 Missouri Universities with TE Programs1	
Lincoln University	
Jefferson City, MO 65101	
Missouri Southern State University	
Joplin, MO 64801-1595	
Dept. of Engineering Technology,	Phone (417) 625-9567
Missouri State University	
Springfield, MO 65804,	
Dept. of Agriculture,	Phone (417) 836-5638
Southeast Missouri State University	
Cape Girardeau, MO 63701	
Dept of Industrial & Engineering Tech.,	Phone (573) 651-2104
University of Central Missouri	
Warrensburg, MO 64093	
Dept. of Career & Technology Education,	Phone (660) 543-4452
Dept. of Graphic Imaging & Design Tech.,	Phone (660) 543-4727
Dept. of Industrial Technology,	Phone (660) 543-4439
Dept. of Safety Science and Technology,	Phone (660) 543-4626

Business & Industry Personnel & Associations

Professional trade associations involved with any facet of any particular technology in question are other logical and important sources for help. These associations are found at local, state and national levels. Don't forget any of them. Much valuable assistance can be gotten from these sources. Figure 8-2 presents a sample of such organizations. TE instructors can identify additional appropriate associations by consulting the Encyclopedia of Associations or other association directories in the reference section at their nearest library.

Don't forget business and industry or the local community's professionals either. Frequently equipment, supplies and other materials are available just for the asking. Business and industry like to help education because the schools supply them with skilled manpower. Some of these contacts are, or should be, members of your advisory committee. Use these contacts regularly on both a formal and an informal basis. Show up at their places of business, just to be friendly, from time to time. Don't just show up or phone only when you want something. Offer your services when it is feasibly for you to be of assistance to them and their firms. This type of partnership is one of sharing and cooperation and should be one of mutual benefit.

Government & Education Association Personnel

State and Federal government agencies in specific service areas can be of immeasurable assistance with problems in their area of expertise. Typically, the types of things that will be involved will not necessarily be technological in nature, although, they may involve technology, industrial, medical or some other kind. After all, technology pervades virtually every aspect of human endeavor. Some of the government agencies that can provide assistance are presented in Figure 8-2.

Educational associations on the local, state and national level can be of assistance in many ways. They offer publications, conferences and special-topic workshops and seminars. Membership in this type of association is highly recommended and it can pay off in dividends for students, faculty and the entire school district. Figure 9-4 lists some of the associations of relevance to TE.

Figure 8-2 Federal and State Agencies	
Federal	
The U.S. Department of Education 400 Maryland Ave, SW Washington, DC 20202 Phone: (800) USA-LEARN Web: http://www.ed.gov/index.jhtml	Center on Education and Training for Employment The Ohio State University 1900 Kenny Rd. Columbus, OH 43210-1090 Phone: (800) 848-4815 Web: http://www.cete.org/
National Research Center for Career and Technical Education (NRCCTE) University of Louisville College of Education and Human Development Louisville, KY 40292 Phone: (502) 852-4727 Web: http://www.nrccte.org/	Environmental Protection Agency Farmers Home Administration Nuclear Regulatory Commission The Dept. of Health and Human Services National Aeronautics & Space Administration Department of Transportation
State	
Missouri Center for Career Education University of Central Missouri T.R. Gaines 302 Warrensburg, MO 64093 Phone: (660) 543-8768 Web: http://www.mcce.org/	Missouri Council on Career Technical Association Web: http://www.mccta.org/
Missouri Economic Research and Information Center P.O. Box 3150 Jefferson City, MO 65102-3150 Phone: 1-866-225-8113 Web: http://www.missourieconomy.org/ Email: MERICData@ded.mo.gov	Missouri State Agency for Surplus Property 117 N. Riverside Dr. P.O. Drawer 1310 Jefferson City, MO 65102 Phone: (573) 751-3415 Web: http://oa.mo.gov/purch/surplus.html
Division of Vocational Rehabilitation Division of Employment Security Division of Family Services	Governor's Committee on the Employment of the Handicapped Job Development and Training Program Department of Health Depts. of Labor and Industrial Relations Wolfner Memorial Library (for the blind and physically handicapped)

The main two TE associations are the (Association for Career & Technical Education's (ACTE) Technology Education Division and the International Technology Education Association (ITEA). Both offer extensive benefits and programs of service to their members. In fact, many in the profession belong and actively participate in both. The Technology Education Association of Missouri (TEAM) serves as the state's representative for both national associations. The Missouri Association of Career & Technical Education, the state's ACTE affiliate, has a Technology Education Division which provides programming and an interface to the vocational education system.

The International Technology Education Association (ITEA) and the ACTE's Technology Education Divisions are the profession's voice for technology and engineering. Their purpose is to enhance service to youth. Their primary concerns involve the evolution of curriculum and personnel in the profession.

School Administration

Perhaps no personnel are as pivotal to the success of the TE program as are the members of the school's administrative team. Here is where degrees of freedom are enlarged or restricted. Instructors must be certain to work carefully and systematically to build administrative support.

3 – Using Available Support Systems

Available support systems are closely related to the previous topic that highlighted resource people. Key resource personnel are a vital component of any support system. There are, however, some support systems that are not necessarily represented by individuals. Some of these include: state department of education programs, federal programs and physical plant services.

The Missouri Department of Elementary and Secondary Education offers, on an annual basis, the Technology and Engineering Grant Awards Program (TE GAP). Guidelines are issued yearly to help TE instructors apply for these funds. Typically they are earmarked for program improvement in Technology and Engineering programs. In the past, such funds have been available for exemplary programs, innovative teaching methods, equipment, supplies, copying and dissemination of successful practices. It is strongly recommended that TE instructors take advantage of this funding to supplement local resources. This enables a more rapid implementation of program change/updating in order to better reflect rapidly changing technologies.

Guidance Support

One of the support systems crucial to the success of TE programs is the school's guidance support. For maximum program effectiveness, formal and cooperative relationships are vitally important.

4 – Using Partnership Advisory Councils

Partnership and Advisory committees at the state and local level should help educators determine the nature, content and activities of each course. In addition, they can provide valuable input regarding the facilities required to implement the program. Local committees are helpful in determining community needs and in identifying the human and material resources available from within the community and local industry.

Although it is important to note that such councils are not policy or decision making groups, their services are valuable and should be given every consideration. But finally, it is the responsibility of the TE instructor and the school's administration to decide whether (and how) the recommendations are to be implemented.

Local partnership/advisory councils may be the single most important source of information and assistance available to the TE teacher. Considerable assistance can be obtained from these councils. However, in interaction with state and national advisory council an even broader perspective on programming, industrial needs and available resources is available.

One overall partnership/advisory council should be established for the TE program. If the school has a career or community advisory council/group/organization, then it is important that a representative from the TE partnership/advisory committee serve on the other advisory group for liaison and coordination purposes. Similarly, one TE partnership and advisory council member should be designated to establish a correspondence link with the national Technology Education Advisory Council. Such correspondence should be directed through the ITEA national office. Another member should keep in touch with Missouri's Council on Career Education.

National Technology Education Advisory Council

At the National Level, the Technology Education Advisory Council (TEAC) was established to provide information to the technology education profession about current developments and possible trends in

technology education. As such, the TEAC services to:

- ◆ Recommend ways of resolving discrepancies between the programs and philosophies of technology education and current industrial/technological practices.
- ◆ Recommend content directions to improve the relevance of technology education.
- ◆ Suggest methods of improving the public's perception and understanding of technology education.
- ◆ Facilitate the cooperation between industry and education to improve the education of youth.

The TEAC's recommendations are advisory since the council has no official policy-making authority. The council's topics of discussion vary as the association's membership suggests or as requested by the ITEA's Board of Directors – the TEAC's sponsoring group.

Local TE Partnership Advisory Council

The duties of local technology and engineering partnership advisory councils are to counsel and advise TE instructors, supervisors, school administrators and the school board concerning the directions, management and supervision of the TE program. Generally these councils also assist in the development and maintenance of the TE curriculum and facility.

Local partnership advisory council provide community and industrial input to teachers and counselors. They are not policy or decision-making groups, rather they advise by reviewing policies and programs, by expressing opinions on programs, services, facilities and learning activities and by identifying trends, priorities and resources. It is recommended that such council be asked to submit an annual report as well as such special reports as appropriate. It is also important that the advisory council addresses the TE program's relationship to the overall school curriculum. Other recommended partnership advisory council activities include:

- ◆ Making recommendations regarding program content and needed curriculum, equipment and facility changes.
- ◆ Providing information and technical assistance necessary to update the program.
- ◆ Assisting in developing performance objectives.
- ◆ Assisting in developing and conducting community surveys.
- ◆ Providing with information regarding new career opportunities.
- ◆ Assisting in obtaining community resources.
- ◆ Assisting in the development and promotion of good public relations.
- ◆ Assisting in the evaluation and review of the program (Towler, p. 75).

Local TE Partnership Advisory Council Membership

There is no answer to the optimum size of an partnership advisory council. Each council should be comprised of member representative of the community it serves. Normally however, about seven members (less in small communities) will provide adequate coverage of geography, minorities and industries within a given community. The following should provide helpful guidelines for selecting council members.

Industry representatives, e.g.:

- ◆ One individual from the communications industry.
- ◆ One from energy/power.
- ◆ One from materials processing industry.
- ◆ One TE educator.
- ◆ One or more parents (can be identified by the local PTO).
- ◆ One or more students (at least one should be female).

- ◆ One representative from the school or system’s administration.
- ◆ One individual representing career education.
- ◆ One specialist in the area of special needs populations.

Some method of membership rotation should be devised prior to the actual formation of a council. Fresh viewpoints and ideas are essential to properly address our rapidly changing technological world. For this reason, only under exceptional circumstances should the reappointment of a committee member be considered. One workable way to address the rotation of committee members is to make their initial terms of varying length – typically one, two and three years are used.

Advisory council could of course use consultants, on a temporary basis, to assist in solving specific problems. Specialists in areas outside of the committee’s areas of expertise can serve on a temporary basis until a specific problem or concern is adequately addressed. If this arrangement is used the consultants would not have voting privileges in council matters. Their services would be on a strictly consulting basis.

Local TE Partnership Advisory Council Operations

Selection of Officers

Each partnership advisory council should elect a chair and a secretary. It is recommended that a teacher or administrator not serve as chair, but may serve as secretary.

Officer Duties

The chair:

- ◆ Shall call and preside at all council meetings.
- ◆ Shall schedule all meetings and make necessary council assignments.
- ◆ Should prepare an agenda for each meeting.
- ◆ The secretary:
- ◆ Will record, maintain and distribute minutes of every meeting to each member of the council.
- ◆ Is responsible for notifying members of the meeting date, time and place.
- ◆ Should provide all members with an agenda and issues to come before the council prior to the meeting, preferably one week in advance.

Meetings

It is recommended that:

- ◆ The initial meeting be held within thirty days following appointment of the council. The superintendent, or a representative, should call this meeting and preside until a chair is selected.
- ◆ The committee members be acquainted with the purpose and duties of the council.
- ◆ Council meetings be planned for specific purposes. Behymer’s guide provides an excellent outline for a program to work.
- ◆ Regular scheduling of meetings be determined by membership, based on existing problems and important matters for consideration.
- ◆ The council should establish its own governance rules.

The School’s Responsibility to Partnership Advisory Council Members

Council members should be informed, by an official letter from the superintendent of schools, that membership is an official act which has state approval. The council and school administrators should work in harmony to serve a definite purpose. Council members must be advised that they are resource persons to improve curricula, facilities, teacher preparation, occupational information, community surveys and public relations. (Towler, p. 76)