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At Issue: The Nomenclature Dilemma Facing Technology Education

Benjamin R. Spencer
Purdue University

George E. Rogers
Purdue University

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Benjamin R. Spencer
George E. Rogers
Purdue University

The 1984 edition of Webster's Collegiate Dictionary defines technology as "a scientific method of achieving a particular purpose" (p. 176). The meaning of the word "technology," however, is relative to the context and time period in which it is used. An additional characterization of technology, written 36 years ago in the American Heritage Dictionary (1970) reads "the application of science, especially to industrial or commercial objectives" (p. 187). These definitions vary according to the editor's perspective and the time period to which it is applied. Like its definition, technology itself has evolved and developed over time as it has broadened its reach and contributed to a multitude of changes in society. Positive and negative, technology has altered our lives. Today, with its infusions into education, particularly at the secondary school level, technology poses both a promise and a challenge for educators.

As new professional educators, recent technology education graduates find themselves entering an ever-changing technological field which is suffering an identity crisis. This crisis is manifested in the relentlessly erratic state of change in technology as well as in the current debate over an appropriate title for the field. For many years, technology educators have been searching for a universal identity, something that is easily recognizable and effectively represents the fullness and diversity of their field. Our name should be our catalyst, and its importance in promoting a unified front for all of technology education must not be underestimated. Zuga (1995) states, "Having established,

Spencer is a graduate student and Rogers is Associate Professor and Coordinator of Technology Teacher Education in the Department of Industrial Technology at Purdue University in West Lafayette, Indiana. Spencer can be reached at spencerb@purdue.edu.

in the public's mind, a firm identity for industrial arts has led to even further confusion with the use of the contemporary replacement term, technology education" (p. 2).

A unified front for the field is currently far from fully developed. The perceptions of technology education vary greatly from state to state, and, in some cases, from program to program. These disparities have lead to confusion even amongst educators in the field. Technology education is not consistent even in some neighboring communities, creating uncertainty as to the purpose, philosophies, and goals of the field. Similarly, a look at names for the field finds many mutations. In secondary schools today the term "technology education" is often used interchangeably with terms like "industrial technology," "industrial arts," "shop," "engineering and technology studies," and "manual arts." Currently, while 48 states classify their technology education programs under the umbrella term "career and technical education," many local communities identify their technology programs by different titles, including industrial arts, industrial technology, and technology education. Two states, Utah and Wisconsin, each recently changed the name of their technology education programs to include the term "engineering."

Today, many technology educators are calling for a new name for the field. Three possible outcomes might result from such a name change: The change could prove to be beneficial. It could help unite the field and promote technology education to the public, to schools, to administrators, and to legislators. On the other hand, a name change could have no effect and leave educators with the same problems of having to explain and justify their programs as they continue to search for a cohesive identity. Or a name change could hinder the field by further confusing perceptions about technology education, thus leading to even less uniformity among technology educators across the nation. Just as some schools failed to transition from industrial arts to technology education, another attempt at a name change could prove difficult to implement while, at the same time, attempting to maintain consistent curriculums and learning objectives.

The field is on the brink of a transition which is of vital importance. "We are at a most critical point in the history of technology education" (Lipton, 2005, p. 32). The judgments

technology educators and leaders make today will have a lasting effect on the field of technology education in the future. This manuscript attempts to explore the benefits, alternatives, and consequences of a name change and its potential impact on the field of technology education.

Technology Education in Transition

Several name changes have occurred throughout the transition and evolution of technology education, each, in their own way, contributing to the current usage of the term. Descriptions of these terms are in order to better understand the time periods they represent, and the necessities, successes, and failures resulting from these changes.

Manual arts is one of the earliest descriptors of our field. Barlow (1976) depicted the manual arts training laboratories from the 1870s in the following way: "Each student had a set of tools and constructed models, in increasing order of difficulty, from his own drawings. The system presupposed a great amount of individual assistance and required that the instruction be given by a skilled craftsman" (p. 46). Scott and Sarkees-Wiscenski (2001) further defined manual arts as a field "that placed its emphasis on applied design and constructive and decorative arts" (p.137). Manual arts focused on creative design combined with tool usage and included five main areas: graphic arts, mechanical arts, plastic arts, textile arts, and bookmaking arts (Scott and Sarkees-Wiscenski).

Industrial arts was the name applied to the field in the early 1900s. Industrial arts was intended to provide the general population with an expansive education covering the industrial world (Putnam, 1992). Industrial arts did not intend to prepare pupils for a specific job in society, yet vocational goals were considered. Scott and Sarkees-Wiscenski (2001) described industrial arts as the study of occupations that change the forms of materials thereby increasing their value for human usage and of the problems of life related to these changes of materials.

As the world continued to develop technologically, the field adjusted its name again. Technology education came to the forefront as the name of the field in the early 1980s and remains the most acknowledged term today. Technology education became

"a growing educational trend to teach children about how people create, modify, and adapt the environment in order to survive, create comfort, and be productive" (Zuga 1995, p. 3). Cuetara (1988) further described technology education as "a comprehensive action-based education program concerned with technical means, their evolution, utilization, and significance with industry, its organization, personnel, systems, techniques, resources, and products; and their social/cultural impact" (p. 4).

Learning from the Past

In the mid to late 1800s industrial drawing was being introduced into public school curriculums via the manual arts laboratories. Tool usage was limited due to lack of adequate training of instructors during this time. In 1876, the Philadelphia Exposition showcased Victor Della Voss and his Imperial Technical School from Russia. Calvin M. Woodward took the concepts behind Della Voss's Imperial School to form the Pioneer Manual Training School in St. Louis (Scott and Sarkees-Wiscenski, 2001). Thus manual arts, the foundation of technology education, was born in the United States.

The idea to amend the name "manual arts" arose in the early 1900s. In 1904 the editor of *Manual Training Magazine,* Charles Richards, recommended that the term "manual arts" be changed to "industrial arts" (Scott and Sarkees-Wiscenski, 2001). This recommendation was made partly because Richards believed the content of manual arts had become a course fundamental to preparing workers for industry. Richards also suggested that the curriculum be derived from the needs of industry (Scott and Sarkees-Wiscenski). This transition from manual arts to industrial arts was slow, as change proved difficult in education throughout the early 1900s. However, slowly, the term "industrial arts" began to take hold across the country in secondary educational settings.

From the first decade of the twentieth century, industrial arts was the name that carried the field for many years (Putnam, 1992). Industrial arts was first defined in print in the early 1930s by Lois Coffee Mossman and Franklin Gordon Bonser. The definition of industrial arts grew to include three main components: education, technology, and society (Foster, 1994).

Then in the 1980s, the field shifted focus once again as technology began to expand at exponential rates. Programs grew and evolved and curriculums changed from traditional wood and metal shops to more advanced technological concepts. "Many educators in this country and around the world have sensed a need to address changes brought about by the rapid evolution of technology" (White, 1990, p. 1). The need arose for industrial arts to reflect these changes and develop an up-to-date definition and a consistent curriculum aligned with modern industrial and technological practices.

The name "technology education" and the current curriculum for the field were developed at Jackson's Mills. A committee, which was comprised of 21 industrial arts educators from around the country, attempted to develop a curriculum that better met the needs of students and redefined their profession. Lauda (2002) noted that the project included goals of defining the discipline, developing a base for curriculum, and considering domains of knowledge, human adaptive systems, and implementation.

However, research conducted by Rogers (1991), suggests the name change could appear to have been impulsive. The "departmental name change, from industrial education to technology education, may have been premature" (p. 13). Similarly, Laporte (1986) stated "without a change in practice before a name change at the local level, the new name may be viewed simply as an opportunistic move" (p. 71). This inability to impose changes in education practice in the field has contributed to the confusion between industrial arts and technology education that exists today.

Viewing the Present

There is currently talk once again of finding a name that better represents the field. In several states, name changes are already taking place. For example, in Utah, according to the Career and Technical Education Association, technology education has changed its name to technology and engineering education. Despite the name change, the mission statement for the program, as stated by the Utah Technology and Engineering Department, is similar to previously stated goals for technology

education: "The mission of technology education in Utah is to enable students to understand, design, produce, use and manage the human-made world in order to contribute and function in a technological society" (Utah Department of Education).

Considering the Future

As technology advances, so must technology education continue to transform. Numerous possibilities exist for altering the name and the curriculum by which we identify our profession. The March 2005 edition of *The Technology Teacher* presents one such example. "Four simple words (technology, innovation, design, and engineering) form the acronym TIDE and modify the term "technology education" to provide a succinct idea of what we are about" (Lipton, 2005, p. 29). Lipton is correct in assessing TIDE as a catchy phrase; TIDE is "easy to understand and easy to remember, it provides a simple, brief phrase that can be used by all" (p.31).

Engineering is beginning to shape technology education with the development of curriculum programs like Project Lead the Way (PLTW). This push for engineering education has accelerated thoughts about adding "engineering" to the name of technology education, just as Utah and Wisconsin have already done, hoping to better define the field.

Conclusions

Technology is developing at an exponential rate, creating issues for technology education. The name change from industrial arts to technology education in the early 1980s created controversy in the field and demonstrated that change in education can be slow. "Technology education is linked both historically and conceptually with industrial arts" (Herschbach, 1997, p. 24). Curriculum change proved even more difficult than the name change as some teachers were reluctant to adopt the new course work even with an overriding title change. There are educators still today who remain resistant and continue to refer to the field as industrial arts and continue to teach the industrial arts curriculum.

Funding appears to have been an issue in smoothing the transition from industrial arts to technology education. In the

1980s funding increases were insufficient, creating difficult transition periods which linger today. According to Oaks (1991), only "about one-half (49%) of the supervisors indicated there was adequate funding for new, emerging curriculum development activities" (p. 64). This lack of local funding for the new technology education existed nationwide. "Thirty-eight (81%) of the 49 state supervisors indicated that less then 50% of local school districts provided any additional funding to support a new technology curriculum" (p. 65). We should expect similar conditions should such a change be applied today. While changes in name and curriculum should prompt increases in funding at the local levels, in many cases today, these funds do not exist. Programs receiving no additional funding would require innovation, hard work, and flexibility by instructors to realize changes in curriculum. The lack of financial and community support creates an obstruction to a transition for the evolving name of the field. Today, as another title change is deliberated, this insufficiency should be considered.

Lipton (2005) questioned the focus of technology education with his proposals regarding TIDE. "What can we do to help us explain the breadth of our field in a clear and concise manner so we can spend more time on what we do and less on justifying our existence and explaining that we're not just about computers?" (p. 31). In such a time of transition, there is no easy solution to the problems facing technology education. With multiple issues facing the field, changing the name will surely put the field in a period of transition similar to that experienced between the early1980s and today.

It is my position that the field of technology education should not change its name. By adding "engineering" to their titles, Wisconsin and Utah have only set the field back in the process of creating a universally recognized program and curriculum. Certainly, engineering is an important component of technology education, especially with the advent of PLTW, but the nature and definition of the word "technology" allows for flexibility in our curriculum. This flexibility will accept PLTW and engineering education as a component of the broader field of technology education without the necessity to change our name. Technology education can absorb engineering education along

with future changes in technology that will shape the curriculum of our field. Just as the term "technology" has changed its definition in dictionaries, so too must technology education adapt and adjust. However, technology education must not consider changing its name each time a new curriculum develops or a new technology arises. Recurrent name changes will only force technology education to continue searching indefinitely for its identity and seeking constantly to define itself to peers.

Suggestions

Rather than searching for a new title, focusing on the current name and promoting technology education as a unified field is the best approach. Another name change will only split the field further, with some teachers aligned with technology education, others with TIDE or technology and engineering studies, and still others with industrial arts. Another name change will also promote the idea that each time a new curriculum develops, the field reacts in a knee jerk fashion and alters its name to reflect that particular curriculum. Professional mathematics educators have not changed their name to "mathematics and calculating" education with the advent of the calculator. Mathematics has remained mathematics; it is universal and well recognized. Technology should follow suit and remain simply that, technology. Technology education should focus on technology education. Let's ensure that everyone is on the same page before we attempt to turn the page yet again.

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