Chapter 5
Vocational Education and Technology

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ABSTRACT

Every generation has seen advances in technology. While many technologies can be viewed as an amazing triumph, a fad, or have a connotation of changing the "normal," two things are certain: that new technologies need to be understood and how they can impact a society. This application of knowledge is hopefully used for the advancement of the society and not the opposing effect. As such, it is the advancements in technology throughout history that brought about the need for vocational education in the United States, especially during the Industrial Revolution. However, educators today are finding it overwhelmingly necessary to expand on vocational education in the United States, more than ever, and a new generation seeks ways of earning a living that include less formal education that will not incur substantial debt.

INTRODUCTION

Every generation has seen advances in technology during their lifetimes followed by subsequent shifts in production and labor. While many technologies can be viewed as amazing triumphs, the one thing that is certain are the myriad of ways that can change the course of history. Technology is the application of knowledge that is used to advance society. As such, it is the advancements in technology throughout history that have brought about the need for vocational education in the United States. This is most notably witnessed in the period referred to as the Industrial Revolution. However, educational leaders today are finding it overwhelmingly necessary to expand on vocational education in the United States as well as around the world, to address the new generation of students who seek pathways that may include a variety of careers that may not require further academic schooling.

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VOCATIONAL EDUCATION

Historically, trade education was passed down within families, wherein a child would learn a skill or occupation from his/her parents or other family members. For example, the son of a farmer would likely take on that trade and, basically, become an apprentice. Yet in the late nineteenth century, the apprenticeship model could no longer keep up with the demands of new skills and technologies needed in constantly-evolving factories. This model of apprenticeship no longer was a relevant form of trade education. As the economic and societal environments of the United States progressed and evolved in the twentieth century. The landscape of the nation and its educational policies throughout the 20th century changed as well.

The Vocational Education Act of 1917, also known as the Smith-Hughes Act, was the Magna Carta of vocational education. Yet the debate about how vocational education fit into the American public education system actually stemmed from Germany's vocational education model. Therefore, in the original vocational act of 1917 there was a push for vocational education to remain separate from the general public school systems. Wirth (1974) argued that the rise of vocational education occurred after the overproduction of goods in the United States during the post-civil war era and the depression of 1893. Many manufacturers went overseas to open up new markets but were consistently outperformed by the German businessmen already there. The American businessmen went to Germany to learn why this occurred. They found that the German model had 21 different schools for the preparation of trades in Germany run by the Ministry of Commerce rather than the public education model in America. Thus, many American manufacturers felt that the German model must be adopted into the United States to ensure successful vocational training. The major influences during this time were David Snedden and Charles Prosser, who produced the technocratic model. This model can best be described as training based on behavior as a stimulus and response curriculum where design is dictated by current industry standards.

The shifting social forces at work during this time included new emerging social sciences and one new pseudoscience, Social Darwinism. Social Darwinism theorized that social status and financial prowess dictated status, which was a very inaccurate scientific interpretation of "survival of the fittest theory," used to drive the needs of the few. Snedden and Prosser, however, deemed that, in society, there were leaders and subordinates that would follow the orders they were given. Snedden viewed the junior high school, which first appeared on the United States education landscape in 1909, as the medium to assign the students into differentiated courses (Wirth, 1974).

Snedden then appointed Prosser to develop a system of vocational schools, which Prosser eventually completed in 1912. Many parallels of Prosser's model were written into the vocational education act in 1917. For example, the instructors providing the training were required to be masters in their respective vocations. Traditional education was kept separate, and the theories had to be Edward Thorndike's that, " all habitats of doing and thinking are developed in specific situations." Since Prosser's work set the stage for vocation education in the United States, he was granted appointment as the executive director of the federal board of vocational education (Corson, 1988).

Hayward and Benson (1993) discussed the unregulated system of vocational education showing that the forms of common standards from one district to the next or one state to another were prevalent. The vocational education system was not conducive to students moving onto post-secondary education settings because there were no benchmarks that were followed unlike its traditional counterpart. "In sum, vocational-technical education programs in the United States lack standards for skill development fail to have coherent, uniform curricula and are unable to systematically assess the proficiency of program completers" (p. 3).