Chapter 3
Philosophical Perspectives on Technology Leadership

Jenny L. Daugherty
Purdue University, USA

Nathan J. Mentzer
Purdue University, USA

Daniel O. Lybrook
Purdue University, USA

Julie Little-Wiles
Indiana University-Purdue University, USA

ABSTRACT
As an introduction to the concept of technology leadership, literature on the philosophy of leadership and technology is explored and synthesized to offer a perspective of the technology leader. After a review of the research, a technology leader is described as an individual who enables others to effectively and successfully use, manage, assess, and understand technologies of the designed world. The technology leader is critical as our complex, global society becomes increasingly dependent on technology. The technology leader is equipped within their particular context to make informed, value-laden decisions, and participate in guiding technological development.

INTRODUCTION

When attempting to understand a concept, we often deconstruct it into essential elements to uncover the meaning. This is the approach taken in this chapter. Leadership and technology are explored as separate constructs; then, their intersections in the literature are explored. From this exploration, a picture of technology leadership emerges. This approach is not without challenges as both leadership and technology are social constructions that have been researched and analyzed in different ways for different purposes over time. Important to understand is the complexities involved within each of these constructs to help paint a more distinct picture of technology leadership.

Leadership, for example, is a pervasive concept. A Google search for “leadership” returns approximately 129,000,000 Websites. A literature search in an academic journal database such as JSTOR returns approximately 360,000 articles. Many academic programs offer one or a suite of courses dedicated to leadership development or the effective practices of leadership within their given domain. Technology is also a challenging concept to definitively pin down. Technology is both a concrete and an abstract concept, in that it is both tangible in technological artifacts (i.e.,

DOI: 10.4018/978-1-4666-2656-0.ch003
machines and tools) and intangible in technological processes and knowledge (i.e., innovation and design). Exploring these complexities is important because technology leadership is dependent upon how leadership and technology are conceptualized. This also has implications for the preparation and role of the technology leader.

This chapter explores the theoretical underpinnings of leadership and technology as separate constructs, as well as a combined construct, to better understand implications for teaching and learning. The primary method employed is a review of the literature surrounding the philosophy of leadership, as well as the technology literature and a review of the related research. In order to advance the field of technology leadership within education and other realms, understanding the philosophical foundations of each and the current empirical research basis is important. Based upon a synthesis of the literature, implications and recommendations for teaching and learning are offered.

**LEADERSHIP**

Leadership is a ubiquitous topic, not only in popular press, but in academic research. The study of leadership as an organized social-scientific endeavor emerged in the early 1930s (House & Aditya, 1997). Bass and Bass (2008) argue that there are numerous definitions of leadership that have often obscured the line between leadership and other positions or processes. The many dimensions into which leadership has been cast and the overlapping meanings offered in the literature have “added to the confusion” (Bass & Bass, 2008, p.15). Each new decade has generated different views of leadership from “inducing obedience,” to moving the organization in a specific direction, to the art of persuading, influencing, or “inspiring others” (p.15). Although there are several definitions of leadership, in reviewing the theoretical foundations of leadership research, it is apparent that consistent threads have emerged.

**Leader Traits and Behaviors**

Throughout the research on leadership, three primary themes emerge: traits, behaviors, and contexts. For example, Jago (1982) conducted a review of the leadership literature and offered a typology of leadership perspectives that highlighted these aspects. Jago (1982) offered a definition of leadership as “both a process and a property” (p. 315). The procedural elements include the use of non-coercive influence to accomplish group objectives and the property elements are the qualities and characteristics of leaders. Included in the typology were two theoretical approaches: (1) universal and (2) contingent; and two focal areas for research: (1) leader traits and (2) leader behaviors. Universal leadership theorists, as opposed to contingent theorists, argue that leadership is not dependent on the context and that there is “one-best-way” to lead, while the contingent theorists suggest that effective leadership is situational.

Researchers have often focused on either traits or behaviors in attempting to understand leadership (Northouse, 2007). Traits are often noted as those enduring characteristics of leaders, whereas behaviors are the actions leaders take. Specifically, Bass & Bass (2008) defined traits as “a construct based on consistent individual differences between people” (p. 103). Interestingly, there have been as many definitions of traits as of leadership over the last century (Bowerman & Van Wart, 2011). Allport’s (1927) call for the term trait to be recognized as the “unit of personality” (p. 292) to provide clarity to the topic has yet to be realized, although many researchers have adopted the term. In the last century or so, the discussion of leadership traits has been debated by scholars, contributing to our modern view on several theories of leadership.

The trait approach to leadership research stems from Thomas Carlyle’s 19th century “Great Man”