

CHAPTER II

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THE CHANGING ACADEMIC CORE: KNOWLEDGE AND SKILLS NEEDED IN THE 21ST CENTURY

We are attempting to educate and prepare students today so that they are ready to solve future problems not yet identified using technologies not yet invented based on scientific knowledge not yet discovered.

—Joseph Lagowski, University of Texas at Austin

A child entering preschool today will graduate from high school or college and enter a world of work vastly different than the one we know. By the time the child completes school, some current jobs will be obsolete, and some new jobs never imagined will be commonplace. If trends continue, jobs will become more cognitive and less routine. For example, today's assembly line includes advanced manufacturing techniques; robotics; and programmable, multi-use machines—a scenario much different than the one in the 1960s when today's retirees entered the workforce. An office worker in 1965 used dictation machines, carbon paper, and mimeographs—no computers, no copiers, and no Microsoft Office.

Technology has revolutionized how we live as well as how we work. In less than 25 years, computers, cell phones, iPods, and wireless broadband have changed how we communicate, interact, find prospective spouses, shop, bank, and live. There are phones that support audio and text messages, and some phones are designed especially for six-year-olds. Between cell phones and e-mail, we live in a 24/7 world. Put another way, the generation entering the workforce today grew up with Internet, cell phones, and Google; the generation leaving the workforce had party lines, slide rules, and a hard copy of the *Encyclopedia Britannica*.