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personalized, and seamless. The learning process in the SLE will facilitate their problem solving and promote their intellectual growth as lifelong learners. This study, then, demonstrates how educational robotics can be used by educators to equip students in the UAE for futures in STEM fields of study and work. It is claimed that students who build robots build futures for themselves and their communities: a worthy goal for Emirati students in 2018, The Year of Zayed.

The introduction of mobile devices has brought about dramatic transitions not only in how ordinary individuals communicate with one another, but also in how media students learn to tell highly compelling digital stories. In higher education, mobile devices are increasingly proving to be quite powerful tools aiding media students in learning storytelling techniques across media platforms. This chapter draws on a pilot project involving a survey of mass communication students at the American University of Sharjah, United Arab Emirates, in which iPads and smart phones were used to generate video stories as course assignments. A survey of students involved in the project reveals they were highly passionate about doing their video storytelling assignment on iPads and smart phones as compared with traditional audio-visual capturing tools. The authors see a huge potential for mobile devices as credible media gathering tools in the emerging real-world journalistic practices.

Saudi Arabia, with its deeply conservative yet rapidly changing society, has adopted an ambitious blueprint for the future in Vision 2030. One of its goals is to increase women's participation in the workforce from 22% to 30%. This case study focused on Saudi female undergraduates undertaking an introductory statistics course. With an emphasis on disruption and smart learning, the author created interventions and tracked changes in attitudes and perceptions of students towards statistics from the beginning to the end of the course. Reusable online resources in the form of a series of content and problem-solving videos were introduced as the semester progressed. At the same time, an appreciative inquiry approach was used to foster a positive change environment. An online forum was created to encourage student discussion and feedback throughout the semester, and anonymous course evaluations were conducted at the end of course. Qualitative and quantitative results are presented here.

With advances in information and communication technology, students can be educated from anywhere at any time at their own pace. Students of the 21st century have different learning expectations. These expectations require the design of smart learning environments to ensure more effective and adaptive learning. This chapter essays an introduction to a new educational tool developed on the Moodle platform by The University of the South Pacific to bridge gaps in mathematics knowledge and skills as students' transit from secondary to tertiary education. The tool, known as the Online Mathematics Diagnostic Tool (OMDT), is an intelligent system which provides online tests and automates personalized remediation. This chapter will include the reasons why this diagnostic tool has been developed for the Pacific region students aspiring for tertiary education. It will also discuss why the tool is considered as a smart learning environment (SLE) and how it ensures effective learning of mathematics.

Chapter 6

Academia across the globe is increasingly integrating smart education into learning that describes digitized interactive technologies with elements of motivation, engagement, and feedback. This chapter presents an intelligent and interactive system using alphabetical sounds using game mechanics for preschoolers in Tanzania. Generally, it has been reported that preschoolers often experience trouble in articulating alphabetical sounds. At present, the mode of teaching alphabetical sounds differs in every preschool, resulting in a lack of standardization. This makes adaptation to a new preschool system problematic, especially in situations where a preschooler is transferred from one kindergarten to another. A smart research framework on the interactive game-based system and attributes of active learning were taken into account to uphold intelligent ways to enable language competency for preschoolers in Tanzania. A study was conducted in Tanganyika preschool in Arusha, Tanzania, which presented initial results of preschoolers' perception of the intelligent interactive game-based system.

Chapter 7

The main objective of this chapter is to demonstrate how an instructional model, 2T2C, was used to infuse 21st century skills in the teaching of secondary school mathematics using a smart learning environment (SLE). It was imperative that cooperative and collaborating learning methodologies were included in the teaching model to ensure peer/teacher interaction to enhance student communication, the infusion of high-order thinking skills to guarantee that students can solve real-world problems and think at higher cognitive levels, the introduction of self-efficacy sessions to ensure that all students have the confidence and self-esteem to believe and have the self-assurance to solve mathematical real-world problems and take responsibility for their own learning, and the infusion of technology as a resource in the teaching and learning process: hence, 2T2C (thinking, technology, communication, and confidence). The scenarios presented highlighted the need for communication, high-level cognitive objectives, multiple evaluation practices, and thinking as key to the learning process.

Section 2
Smart Learning Environment for Educators and Stakeholders

The design of learning environments has greatly influenced learning approaches and strategies, and has traditionally been considered to exist within the physical walls of a learning institution. In recent years, learning environments have evolved alongside advances in the internet, technology, and mobile devices and have given rise to smart learning environments to better accommodate a new generation of learners and learning behaviors. This chapter presents an exploration of the possibilities of smart learning environments in distinct and diverse environments, across varying learner locations, profiles, and demographics. The authors explore and analyze technology and pedagogy elements that make up an effective smart learning environment, through different cases and viewpoints of the contributing authors of this book. Based on the findings, they propose a framework for the design and implementation of smart learning environments that will effectively create engaging, personalized, and effective learning moments for individual learners.

This chapter is related to pre-service teachers preparing to teach in Kuwait public schools. Pre-service teachers were enrolled in an instructional technology course related to how to integrate emerging technologies, especially Web 2.0 tools, in their teaching. This course emphasized the connection between theory and practice reinforcing the process of how pre-service teachers smartly think about using web tools as means to enable them to experience deeper thinking when creating their lesson plans. This deeper thinking process will prepare them to transfer their gained experience into their actual teaching field. A conceptual model combining 7P-ILD with ASSURE model aided the design of the smart lesson planning environment. This design enables pre-service teachers to create innovative lesson ideas in the cloud environment. The lesson ideas and tools that were used to engage deeper learning enabled pre-service teachers to share their ideas with a wider audience and at the same time allowed the wider audience to assimilate these ideas into their own lesson structures.