Preface

Carefully identifying future research trends, needs, and priorities can affect and modify the development of Distance Education (DE) in a postmodem world; we need to learn how to break down the digital walls. Past and future developments must be considered in order to devise a unique, open, and democratic system of DE through communication, pedagogy, and technology in the education system. Responsible online workers must be found to identify the priorities and needs of DE. A critical approach must be taken to handle the increased volume of DE, the frequency of its use, and to ensure a growth in the quality of online communications. Research on DE should address theoretical, practical, and technical issues, but it must also consider the philosophy behind interactive DE. The objects and goals of DE must be subject to constant critical attention and revision. DE has been the subject of serious academic research. However, there must be more continuous and multicultural attention paid to the impact of the latest communication-based, pedagogy-based, and technology-based developments on DE from the world. In short, the main purpose of this edited book is to identify, categorize, and rank the future research trends, priorities, and needs for Distance Education (DE). The key focuses will be the following:

1. What are the major trends, research issues, and challenges of communication for DE?
2. What are the major research trends, issues, and challenges of pedagogy for DE?
3. What are the major research trends, issues, and challenges of technology for DE?

There have been both public satisfactions and dissatisfactions with DE, which need to be addressed. In this context, this book has 26 chapters and is divided into 4 sections that provide current, strategic, and creative information to those interested in omnipresent DE with its transformative models: “Introduction,” “New Communication Trends in Distance Education: Communication-Based Research Priorities and Needs,” “New Pedagogy Trends in Distance Education: Pedagogy-Based Research Priorities and Needs,” and “New Technology Trends in Distance Education: Technology-Based Research Priorities and Needs.”

Chapter 1 gives information about the Distance Education System at Anadolu University (DESA), which has nearly two million students from diverse backgrounds. By the 1990s, the number of people of postgraduate age employed in Turkey had gradually increased to over 60 percent. The shortage of funds for educational services such as adequate classroom spaces and well-qualified instructors was already creating difficulties across the country. Higher educational institutions of all types had to decide on the principles, which were to guide them in dealing with this tremendous increase in the population. In this context, Anadolu University made provocative recommendations in 1982, defended the Distance Education system as the most appropriate milieu for the continuous education of the postgraduate students of Turkey, established the first College of Open Education in Turkey, and became one of the mega universi-
ties in the world. In short, the founding fathers of the Distance Education System of Anadolu University were able to critically analyze new priorities and needs in the area by just thinking big!

Chapter 2 discusses about research into the design, delivery, support and administration of Online Distance Learning (ODL) programs in higher education. ODL is developing, but still nascent with theories and discourses from many areas of traditional education being examined and developed to address the particular affordances of online education. Whilst debate continues about the procurement of and best application of educational technologies and systems, one aspect of the debate seems clear, that the technology and content alone is not "e-learning." Directing someone to an online repository does not mean learning will necessarily take place. Whilst the technology and the content are essential, both are important only insofar as the affordances they provide for learning to take place. Using empirical evidence, this chapter argues that the actions of the tutor are therefore pivotal in an educational environment where the learning process is directed at more than simply accessing information.

Chapter 3 points out that the development of digital technology has been highly accelerated since the 2000s. New media environments, which increase interactivity, have been provided to users. With technological convergence, all environments in the category of new media have had the opportunity to work together. With the support of digital technologies, traditional media have also started to include elements that will allow interaction. Support of digital technology does not allow us to see that traditional media is an interactive media but it permits interactive media guidance. Newspapers, books, and magazines, which are located in the category of traditional media, support readers by directing them to interactive media with augmented reality applications. Augmented reality applications in printed materials has been used in many fields. In particular, course books, which protects the existence as the basic learning material of distance learning, can support its content with augmented reality applications. The features of augmented reality applications that allow the presentation of additional information, such as visual, audio, animated text, are discussed in this chapter.

Chapter 4 aims to show the possibilities of the use of plug-avatars "hhh" technology education as a Service-Oriented Virtual Learning Environment (SOVLE) in Sliding Mode (SM). This allows teachers to create an integrated learning environment using tools that have been selected to best meet their academic requirements and individual abilities of each student’s full training in the system of Distance Education (DE). The work reported in this chapter engages with all aspects of Virtual Learning Environment (VLE) design and architecture. Thus, created software of plug-avatars “hhh” technology education for SOLVE are applicable for use in DE processes and in virtual research collaboration works at the Astrakhan State University, Tomsk State University of Control System and Radio Electronics (Russian Federation), at HHH University (Australian Federation and the Republic of Armenia), at Rohilkhand University (India), and at National Central University (Taiwan).

Chapter 5 examines emerging priorities and trends in virtual or online teacher education courses using empirical research findings on online courses. The benefits and challenges of the online practicum course are explored, as well as the efficacy of online coaching if it impacts on participants’ teaching practice. The uniqueness of this online course is that it uses synchronous one-on-one coaching as an innovative way of leading them to the next level of inquiry. This virtual course facilitates mutual and progressive improvement through synchronous and asynchronous communication tools. The results include the procedure of the interactive and effective online course development, benefits and challenges of taking well-designed online courses, and impact of guided and reflective virtual coaching as well as future direction.
Chapter 6 focuses on online culture, which is founded on classical culture. Internet presents us synchronically actual information and archetypical experiences. Each virtual navigator, has his/her own odyssey or own labyrinth. Cultural and political facts are manifesting on Internet in a faster, more open, free, and efficient and multiple ways than real life. Actual Internet information produces and creates continuously a knowledge accumulation, certainly full of inspiration for intellectuals.

Chapter 7 mentions that online gaming is becoming a commonplace activity for all age groups, but particularly student-age individuals engaging in distance learning. Within the gaming environments, players involve themselves in events and interactions, collaboration, extensive reading, evaluation, and communications. Incorporating these activities into instruction can create a richer learning environment that leverages student interest and motivation. An important pedagogical aspect to keep in mind in adopting this tool is assessment. Student assessment should be considered as to whether traditional methods of performance evaluation are sufficient for such innovative learning contexts, or whether non-traditional methods should be adopted to leverage the changing contexts of the environments. The purpose of this chapter is to explore what educational benefits online gaming can bring to distance learning contexts and how assessment can be adapted to incorporate this new venue of potential educational curricula.

Chapter 8 proposes a road map for designing ecological and sustainable e-learning practices. Participants with diverse backgrounds, various motivations, expectations, and different teaching and learning styles either individually or within communities interact in an e-learning environment. Efforts on developing the best e-learning environments cultivating efficient learning experiences are vital, yet every e-learning practice is unique regarding its content, participants, objectives, and the environment in which it takes place; thus, “one size fits all” might be a constricted vision for the future of e-learning. Concerns in the design process need to be more than developing the most effective methods, strategies, techniques, and technologies. A promising e-learning system for future generations needs also to be humane and sustainable; humane in the sense that expectations of all participants would be best fulfilled as possible and sustainable so that resources will not be damaged, depleted, and continue to serve. Sustainability is not limited to efficient use of resources; it constitutes a precondition for the human wellbeing by defining how systems would remain diverse and productive over time. This definition has its roots in ecology. Ecology provides a holistic view in which relations of living organisms with respect to each other and their natural environment is studied and ecosystems, particular areas in which all the living and non-living components interact, are sustained by the biodiversity within them. Preservation of biodiversity is important since it is the measure of health for any ecosystem. Moreover, a sustainable ecosystem is a biological environment that is able to flourish and support itself without outside influence or assistance. In ideal sustainable ecosystems, everything for the life to survive is already provided and no waste is generated. In recent years, various researchers have associated the concept of ecosystem with both traditional and digital learning and have presented definitions and models for creating better learning environments. These definitions and models have been supportive in understanding the components, interactions, boundaries, uniqueness, and diversity of e-learning ecosystems; however, provisions for permanence and sustainability have not yet been sufficiently studied. This study, therefore, presents results of a study carried out at Anadolu University, aiming to define sustainable e-learning ecosystems. Through questionnaires, participants from different disciplines were asked to define e-learning ecosystem with reference to ecology and analyze waste with reference to sustainability principles. Based on the results of the study, a road map for designing sustainable e-learning ecosystems is proposed. The proposed road map preserves the fact that every e-learning practice is unique but placing “no waste” motto as an input to the design process is held essential. Hopefully, program developers and designers will take this view
as a reference area for designing sustainable e-learning ecosystems. Nature itself presents the healthiness diversity provides, so do the results and further discussion suggestions of this study.

Chapter 9 discourses the digital storytelling approach, one of such applications, which provides students with several opportunities and enables them to use technology as active participant designers in the process of putting forward their creativity and which allows them to create their own original and creative languages. The digital storytelling approach provides students with several opportunities that enable them to use technology as active participant designers in the process of putting forward their creativity and that allow them to create their own original and creative languages. The digital storytelling approach reveals students’ creativity as well as provides a multifaceted environment to help students acquire various skills and efficacies such as technology use efficacy, sophisticated literacy skills, multicultural viewpoints, critical thinking skills, problem solving skills, and capability of putting different perspectives into practice. In such a multifaceted environment, students inevitably demonstrate their creativity. Effective integration of creative digital storytelling applications into e-learning environments will result in an interactive process since, within the framework of e-learning, digital storytelling helps students to develop a creative, multi-cultural, project-based viewpoint that allows access to rich sources and that has a universal interaction. This chapter discusses how digital storytelling can be connected with creativity, based on e-learning system. The discussion of the chapter serves to determine the reflections of the digital storytelling approach on creativity and to associate digital storytelling with the e-learning-based application process. This chapter focuses on the aim throughout the narrative literature review.

Chapter 10 reveals the trends of the research conducted in between 2007-2012 on distance education theories. The literature was examined and analyzed based on theories, topics, research methods, statistics used, and the data collected in the research. Within this scope, full-text papers in the databases of EBSCO, Springer, Elsevier e-Reference, ERIC, JSTOR, SAGE, and ULAKBİM were reviewed, and a total of 209 articles were identified. The analysis outlines the trends in distance education and attempts to determine the deficiencies and gaps. The discovery of deficiencies and gaps are believed to not only raise awareness about the existing needs but also guide further studies.

Chapter 11 mentions that students with disabilities are increasingly opting to take distance education courses. As a result, many courses are not prepared to adequately meet the needs of their students. This chapter provides an overview of the main accessibility issues, including the delay in technology use and adaptation and assistive technology integration for people with disabilities in distance education courses. To mitigate these issues, a framework for instructional design, Universal Design for Learning (UDL), is presented. UDL is a set of three principles that, when applied from the beginning of the course design, can reduce the need for later modifications or accommodations. Instructors may use UDL to ensure that the course is accessible, not just for students with disabilities, but for all students in the course.

Chapter 12 analyzes that the advance of technology has changed the ways of instructions in higher education, and new communication trends as well as innovative pedagogy evolved to be reconciled with new technology trends in distance education. What are the major challenges of communication in distance education? This chapter explores how dissertation chairs perceive social presence in online dissertation courses, and what challenges these online instructors have in distance dissertation mentorship. In this study, the authors interviewed eight experienced dissertation chairs to explore their insights and opinions on the effectiveness of social presence in distance dissertation mentorship as well as to examine the controversies hidden in online instructions. Major issues and problems in applying social presence theories in dissertation mentorship emerged from the interview results. Solutions and recommendations are provided to tackle the problems. Future research directions are indicated as well.
Chapter 13 presents a description of Massive Open Online Courses (MOOCs), their brief history and some examples. Then the chapter focuses on online learning and how research on distance education can be used to inform the design of these courses. In particular, the authors consider research in the following areas: improving learner experience, online activities, and assessment.

Chapter 14 reviews the concept of seamless learning for Massive Open Online Courses (MOOC) based on the distillation of key factors from papers discussing and describing the Mobile Seamless Learning (MSL) concept. The MSL concept was used as a starting point to explore how MOOC could be prepared for seamless learning and to explore future research options. There is a vast area of research to be explored related to seamless learning in MOOC. The authors believe that some of the challenges faced by MOOC, such as “dropout” rates, redefining learning activities to fit diversity of contexts, self-directed learning, collaborative content artifact creation, the mobility of the adult learners, and the “dip-in, jump-out” aspect of participation, can be countered by researching and suggesting seamless learning designs and guidelines that fit both the adult learners and the MOOC realities. Investigating all the elements, challenges and benefits for providing seamless learning in MOOC environments will contribute to the body of knowledge of contemporary online learning.

Chapter 15 discusses distance education, which has long been used both in pre-service and in-service teacher education programs to provide wider opportunities to people who are not able to attend face-to-face courses. Since teacher education is a wide topic with participants having quite a wide range of needs, there is still a need to get information on different models, especially on the practicum part of teacher education. Within the realm of this topic, this chapter aims to describe an innovative model, the design of which is based on a need in Turkey, and discuss it in the light of available literature. After a brief terminology clarification, major models and trends in language teacher education are brought forth and discussed. Then, the model developed by Anadolu University, Distance English Language Teacher Training (DELT), is explained and further suggestions on the issue are made.

Chapter 16 underlines that new and developing technologies influence all societies in the 21st century, in which the process of change is experienced intensely. Through the increased routes of access to knowledge and the increased importance of up-to-date information, the needs and expectations of individuals have become more varied. Countries with individuals equipped with new and current information in accordance with the needs of the age have an important competitive advantage in the global economy. The importance of education as a social institution grows every day in this process. In the 21st century understanding of education, which portrays the individual as a value to be developed, many sub-fields of expertise have emerged as educational sciences developed further. Studies in these fields allow for educational institutions to train and raise more qualified people. One area of expertise that guides national educational policies today is distance education. Distance education services provided by emerging technologies provide flexible learning opportunities for all individuals. An important aspect in providing distance education services is the economics of distance education. This chapter studies the economic aspects of distance education services through a general evaluation of emerging technologies with regard to the economics of distance education.

Chapter 17 introduces the emerging trends in Distance Education and Teachers’ Education in Ghana. In the past two decades, there has been rapid demand for higher education in Ghana. This has created continued pressure on the government to institute viable alternative solutions to curb the incidence where qualified applicants are often denied admission to higher education due to limited infrastructural facilities. Distance education has emerged as the best alternative means to help provide admission to qualified applicants, especially those in the field of teacher education. Descriptive statistics were used to
analyze secondary data from two public universities that offered teacher education degree programs in distance education. Results indicate an increased progression of students in teacher education programs in distance education over the last ten years. This chapter offers background information on distance education with emphasis on teacher education in Ghana. In addition, the chapter discusses the results of secondary data, prospects, and challenges facing distance and teacher education in Ghana.

Chapter 18 concentrates on lifelong learning, which is a concept that enables learners to improve themselves independently of the space and time and makes them get equipped with knowledge, skills, and attitudes at the dimension of internalization. In addition, educated individuals, who can think critically, solve problems, make independent decisions, work cooperatively, can be creative and involve in lifelong learning activities. When looking from this framework, educational institutions are considered to be responsible for spreading the knowledge through means such as e-learning, virtual university, Web-based education, distance education, which offer professional development. Therefore, distance education institutions have an important place in the education system of the future. However, innovations and developments have to be followed closely and operationally used for adaptation to education system of future within the distance education system as well. Scientific and realistic ways of adapting to these developments is possible only if program development efforts are constant. Efforts of putting into practice many concepts, such as changes in teacher qualifications, differentiation of student profile, rapid increase in content that needs to be learnt, and increased importance attached to means of accessing information, teaching design, internationalization, and entrepreneurship have given rise to differentiation in the program development concept of distance education.

Chapter 19 mentions that recent years have seen massive growth in transnational education and this appears to have arisen from strategies of risk mitigation among traditional educational institutions. The results of this process have been for universities from the UK, Australia, and America, in particular, to enter into partnerships with providers around the world who then deliver the universities’ programmes at a distance. A consequence of these developments has been a trend in parts of Higher Education for pursuit of growth in non-traditional market segments to change in focus from distance education and to transnational partner-based modes of delivery. However, rather than taking the view that transnationalisation is displacing distance education, the central argument of the chapter is that this process of transnationalisation could actually be understood as a developing form of distance education itself, and it may be time to widen prevailing definitions of distance education.

Chapter 20 presents that presence, a sense of “being there,” is critical to the success of designing, teaching, and learning at a distance using both synchronous and asynchronous (blended) technologies. Until recently, presence has been defined and discussed in terms of behavioral or cognitive theory. Emotional aspects of presence have been largely ignored. A theory of presence must incorporate emotions and take into consideration their interaction with behavior and cognition. In order to create, convey, and/or experience a sense of presence, it is necessary to become familiar with and take into consideration the types, modes, determinants, and dimensions of presence. In addition, it is important to recognize that when others sense your existence, it may enhance your individual sense of presence and your differentiation of self and experience of self. Further, continuing to experience and practice with technologies, in groups and sharing with others, a sense of presence will most likely increase. Presence will also be affected by expectations based on prior experience; as expectations rise, it refines ways in which presence can be experienced. Throughout this process, trust and support are critical. The concept of presence has been conceptualized differently across various theoretical models.
Chapter 21 presents the theoretical background and overview of the design of an asynchronous online mathematics pedagogy course taken by graduate students who are seeking their initial teacher certification. The authors provide the theoretical underpinnings for the design of the course, and then using design-based research, describe the refinement of the course over three iterations of designing and implementing the course. Lastly, implications for the design and delivery of asynchronous online courses are discussed.

Chapter 22 discusses about the major trends, issues, and challenges with Learning Management Systems. A Learning Management System (LMS) offers a set of tools for e-learning delivery and management. For institutions offering online or blended courses, an LMS has a profound impact on teaching and learning because it is the main technology used in higher education e-learning courses. This chapter discusses major trends, issues, and challenges with the LMS in the context of online instruction at higher education. The chapter ends with a discussion of new trends with LMS.

Chapter 23 explores the various challenges of evaluating the quality of distance education programs and proposes methodologies for future research. The authors provide a framework for teaching within the context of distance education and discuss the existing literature surrounding the characteristics of students who engage in distance education, their academic achievement, and their rates of completion. Empirical studies in primary and higher education are examined. While some research supports the great promise of distance education, there are inherent methodological, ethical, and epistemological challenges in evaluating the quality of distance education. The chapter illuminates the need, promise, and challenge of conducting rigorous evaluations and concludes with suggestions to strengthen evaluation in the future.

Chapter 24 examines the challenges and opportunities associated with fostering students’ learning skills through teamwork assessment and self/peer evaluation in the Business Technology 2 (BT2) undergraduate unit at an Australian university. This assessment will encourage students to promote skills in teamwork, communication (writing, interpersonal interaction and cultural awareness, and presenting), critical and creative thinking (problem-solving and solving and decision-making), Information Technology literacy, and information literacy, and is intended to increase their self-confidence in both their studies and in the future workforce. This chapter provides empirical evidence from 267 students, based on quantitative and qualitative data derived from two sources. The first consists of anonymous informal feedback collected during the semester, while the second (formal) source of students’ evaluations and attitudes towards the BT2 unit and teaching is “eVALUate.” The students indicate that they are satisfied with this form of assessment as it assists them to develop specific skills and understandings, including time management, problem solving, decision-making, cultural awareness, oral presentation, communication, and meeting a deadline.

Chapter 25 reviews the cognitive scientific state-of-the-art relevant for Distance Education (DE) followed by an overview of how different aspects of Distance Education relate to such cognitive mechanisms. The goal is to list and categorize the cognitive advantages and disadvantages of DE and consider and discuss how cognitive factors can be negotiated in new developments in DE. The authors argue that modern DE provides excellent opportunities to supplement traditional DE by the providing of contingent feedback while meeting the learner’s need to stay intrinsically motivated.

Chapter 26 is framed from an American perspective, largely because the vast majority of K-12 online learning occurs in the United States, but future research on these issues is essential to K-12 online education in any context. It is growing increasingly evident that online learning is the future of K-12 education, both in the United States and the rest of the industrialized world. Improved technology, coupled with the perceived cost-effectiveness of online education, has resulted in growing numbers of
states and K-12 school districts embracing “anytime, anywhere” education. Research on K-12 online education, however, has not kept up with its growth. This chapter explores three structural issues that are currently limiting online learning from being a viable alternative to K-12 face-to-face instruction in the United States: inadequate training of online K-12 teachers, issues related to accessibility for students with diverse learning needs, and the importance of structuring courses in a way that responds to the diverse backgrounds of K-12 students.

Recent years have seen rapid movements in DE, a powerful utilization of new approaches, and methods and techniques that will have an impact on social and political issues and problems. A major issue is the identification of a set of global values, norms, and ethics to relate to the diverse needs of users in the digital world. One of the major issues appearing perpetually throughout this concern is how to identify global values, norms, and ethics. Establishing appropriate interactive online communication environments empowered by DE is essential and complex. Making the right decisions maintain and improve Distance Educators’ sense of social responsibility in the Information Age. This is important not only because of our increased dependence on DE, but also these online communication technologies pose complex challenges, which will have an even greater significance in the near future. When addressing major research priorities and needs, and examining the major research issues and challenges for DE in the near future, it is essential to clearly identify, rank, and categorize the research and to take into account the online workers’ values, norms, and ethics in relation to these revolutionary communication technologies.

T. Volkan Yuzer  
Anadolu University, Turkey

Gulsun Eby  
Anadolu University, Turkey