Chapter 1
On the Intersection of Artificial Intelligence and Distance Education

Utku Kose
Usak University, Turkey

ABSTRACT

In today's world, intelligent systems play an important role in improving humankind's life standards and providing effective solutions for real-world-based problems. In this sense, such intelligent systems are the research outputs of the Artificial Intelligence field in Computer Science. Today, in many fields intelligent systems are widely used to obtain effective and accurate results for the problems encountered. At this point, education is one of the most remarkable fields in which lots of Artificial Intelligence-oriented research works are performed. When we consider the education field in terms of the latest technological developments, we can also see that the e-learning technique and more generally distance education approach are highly associated with the applications of Artificial Intelligence. Therefore, in this chapter the author explores the trends within the interaction between Artificial Intelligence and Distance Education. The chapter is a brief report on current trends of applications of "intelligent distance education" solutions. It also provides a short focus on the future possibilities of the relation of Artificial Intelligence and Distance Education.

INTRODUCTION

It is clear that the life standards, which form our living styles, determine our status in the context of communities, and shape viewpoints on the world are changed in a rapid manner, as a result of developments in different technologies. Newer technological developments enable humankind to take less active role on solving problems of daily life because there have been great efforts on designing and developing advanced systems to support and help people to overcome their problems in a fast and easy way. In this sense, mechanical systems have given their roles on improving the life to electronic devices appeared in time. We can now say that our life has been covered with electronic devices and especially advanced electronic devices, which support us in our daily activities, have taken an important part in our life; because of their intelligent mechanisms to overcome problems of needing fast, effective, and accurate solution approaches. At this point, such electronic devices include some essential features and functions employed from some specific scientific fields.

Because of their role on automatically deciding and providing solution ways, such devices are called as "intelligent systems".

In today's modern world, intelligent systems have an important role on improving humankind's life standards and providing effective solutions for real-world based problems. In this sense, such intelligent systems are the research outputs of the Artificial Intelligence field in Computer Science. With its effective approaches, methods, and techniques on many problems and so wide application scope, Artificial Intelligence field has become one of the most popular and long-term research areas for scientists. In time, different types of approaches, methods, techniques of Artificial Intelligence have been employed in problems of different fields and because of success among different research works, the scope of the Artificial Intelligence has improved. Today, we can express that in many fields, intelligent systems are widely used to obtain effective and accurate results for the problems encountered. At this point education is one of the most remarkable fields in which lots of Artificial Intelligence oriented research works are performed. When we consider the education field in terms of the latest technological developments, we can also see that the e-learning technique and more generally distance education approach are highly associated with the applications of Artificial Intelligence. So, it will be a remarkable approach to figure out the trends within the interaction occurred between Artificial Intelligence and Distance Education.

This chapter aims to provide a view on the intersection of Artificial Intelligence and Distance Education. As general, the chapter is a brief report on current trends on applications of "intelligent distance education" solutions. It is important that as a result of many research works performed on applying Artificial Intelligence over educational studies, some essential application titles indicating the intelligent mechanisms along educational processes have been expressed. Currently, these titles are one of key points to examine literature with a clear but deep enough view. In addition to

the focusing on the application orientations, the chapter also provides a short focus on the future possibilities on the relation of Artificial Intelligence and Distance Education. This chapter can also be accepted as an essential reference point to the start of our book: "Artificial Intelligence Applications in Distance Education".

In the sense of the related explanations, remaining content of the chapter is organized as follows: Next section is devoted to some brief explanations on the foundations of this chapter: Artificial Intelligence and Distance Education. Following that, the third section is focused on currently performed Artificial Intelligence based applications in the related Distance Education activities. After this section, there is a brief view on the future regarding to the applications of Artificial Intelligence in Distance Education and the last section ends with expressing some conclusions.

FOUNDATIONS

Briefly, this chapter has been written on the intersection of Artificial Intelligence and Distance Education. So, before discussing about essential Artificial Intelligence applications for Distance Education, it is a good way to have enough knowledge on the related subjects, which are main components of the chapter.

Artificial Intelligence

Artificial Intelligence is one of the most important application and research fields within the Computer Science. So, it is highly connected with most of sub-subjects examined under the Computer Science. It is possible to make two different definitions for the Artificial Intelligence. One definition can be made as Artificial Intelligence is a term that is used to describe the feature, function or characteristic of computer systems or machines that try to simulate human-thinking behavior or human intelligence. On the other hand; the other definition accepts the Artificial Intelligence as a field

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/on-the-intersection-of-artificial-intelligence-and-distance-education/114437

Related Content

Understanding the Setting of a MOOC: A Journey into Coursera
Robab Saadatdoost, Alex Tze Hiang Sim, Hosein Jafarkarimiand Jee Mei Hee (2016). *International Journal of Information and Communication Technology Education (pp. 77-98).*
www.irma-international.org/article/understanding-the-setting-of-a-mooc/143153

Differences between Visual Style and Verbal Style Learners in Learning English
Chiu-Jung Chen (2014). *International Journal of Distance Education Technologies (pp. 91-104).*
www.irma-international.org/article/differences-between-visual-style-and-verbal-style-learners-in-learning-english/111229

Better Use of Digital Images in Teaching and Learning
Y. J. Zhang (2005). *Encyclopedia of Distance Learning (pp. 152-158).*
www.irma-international.org/chapter/better-use-digital-images-teaching/12099

Supporting Children in Mastering Temporal Relations of Stories: The TERENCE Learning Approach
Tania Di Mascio, Rosella Gennari, Alessandra Melonioand Laura Tarantino (2016). *International Journal of Distance Education Technologies (pp. 44-63).*
www.irma-international.org/article/supporting-children-in-mastering-temporal-relations-of-stories/143251

Construction and Improvement of a Vocational Education and Teaching System Oriented to "Internet+"
Yan Zhang (2024). *International Journal of Information and Communication Technology Education (pp. 1-16).*
www.irma-international.org/article/construction-and-improvement-of-a-vocational-education-and-teaching-system-oriented-to-internet/337897