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 dif-
ferent 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 indicat-
ing 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 Intelli-
gence 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, remain-
ing content of the chapter is organized as follows:
Next section is devoted to some brief explanations
on the foundations of this chapter: Artificial Inteli-
gence 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 regard-
ing 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 in-
tersection 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 Com-
puter Science. So, it is highly connected with most
of sub-subjects examined under the Computer Sci-
ence. 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 charac-
teristic of computer systems or machines that try
to simulate human-thinking behavior or human
intelligence. On the other hand; the other defini-
tion accepts the Artificial Intelligence as a field

On the Intersection of Artificial Intelligence and Distance Education

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 dif-
ferent 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 indicat-
ing 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 Intelli-
gence 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, remain-
ing content of the chapter is organized as follows:
Next section is devoted to some brief explanations
on the foundations of this chapter: Artificial Inteli-
gence 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 regard-
ing 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 in-
tersection 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 Com-
puter Science. So, it is highly connected with most
of sub-subjects examined under the Computer Sci-
ence. 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 charac-
teristic of computer systems or machines that try
to simulate human-thinking behavior or human
intelligence. On the other hand; the other defini-
tion accepts the Artificial Intelligence as a field
Related Content

Intelligent and Adaptive Web-Based Instruction
[www.irma-international.org/chapter/intelligent-adaptive-web-based-instruction/27407](www.irma-international.org/chapter/intelligent-adaptive-web-based-instruction/27407/)

Internet Usage Among University Lecturers in Southern Nigeria
[www.irma-international.org/article/internet-usage-among-university-lecturers/2278/](www.irma-international.org/article/internet-usage-among-university-lecturers/2278/)

ICT, Education, and Regional Development in Swiss Peripheral Areas
[www.irma-international.org/chapter/ict-education-regional-development-swiss/27532/](www.irma-international.org/chapter/ict-education-regional-development-swiss/27532/)

Virtual Spaces as Artifacts: Implications for the Design of Educational CVEs
Ekaterina Prasolova-Forland (2004). *International Journal of Distance Education Technologies* (pp. 94-115).
[www.irma-international.org/article/virtual-spaces-artifacts/1642/](www.irma-international.org/article/virtual-spaces-artifacts/1642/)

Fostering Meaningful Interaction in Health Education Online Courses: Matching Pedagogy to Course Types
[www.irma-international.org/article/fostering-meaningful-interaction-health-education/2337/](www.irma-international.org/article/fostering-meaningful-interaction-health-education/2337/)