

## Chapter 5

# Universal Design Principles and Technology-Supported Learning in the Digital Era: Assistive Technologies in Inclusive Learning

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### **ABSTRACT**

*Today, providing all learners with technology-supported learning environments has become important due to the use of new technological advancements in learning environments. All learners have the right to benefit from these advancements in an equal learning environment. One of the factors which play an important role in providing an equal and effective learning environment is learner characteristics. The learning pace and style of each learner are different. Universal design principles and assistive technologies play a big role in providing learning environments in the context of such individual differences. From this point of view, creating inclusive learning and inclusive learning environments which consider learner variety and differences specific to each learner and providing technology-supported learning environments utilizing universal design principles and assistive technologies are discussed in this chapter.*

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## INTRODUCTION

*We need technology in every classroom and in every student's and teacher's hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world. (Warlick, 2006)*

One of the greatest revolutions of the Digital Era is, without doubt, digital revolution in education. As new horizons have been opened by means of the Digital Era, the methods applied through digital tools have drawn attention as a replacement for conventional learning and learning methods, and the world of education has gone through a big transformation as a result of the digital revolution. With the digital transformation in education, the pace of such advancements in digital technologies in the Digital Era in which we live is unprecedented, and the innovations introduced are beyond our imaginations. These innovations make access to information independently from time and space possible. Education is transformed into a data-based and personalized experience. Owing to the digital transformation in education, the learning process is under learners' control. Learners are enabled to manage the learning process according to their personal preferences. Learners learn whenever they want and most importantly, they do not study at the average pace of the class, but at their own pace, thus adopting their own learning process. In addition, these technologies even motivate adults, as well as children, and help them learn without becoming bored. In this context, digital learning is of great importance for the individualization of learning on the basis of the learning pace, style and needs of learners, i.e. learner variety/differences; and are very practical regarding benefiting from the availability and accessibility of technologies in designing educational programs.

Digital instructional tools have a potential to make a change if they are used to create equal opportunities in life for all learners, especially for disadvantaged learners (learners at risk or learners with special needs). If we consider the potential that the technologies at hand have, it is not hard to imagine more sophisticated and more personalized learning systems and applications that make things easier in daily life will be created in the following years. The digital potential may also help learners build a better future as well as improving their daily lives. Therefore, it is a must to help many learners, including learners with special needs, as well as learners, who display typical development, access to these opportunities and benefit from the opportunities provided by the digital world as much as possible. Learners with special needs can also learn, live independently in the future, and most importantly, integrate with society just like all typically developing learners when they are provided with these opportunities. At this juncture, a fair learning environment will be needed to be created for all learners utilizing assistive technologies based on universal design principles. In the Digital Era, access to information is crucial,

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