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Adaptive Learning: revolutionizing the world of learning

We often hear about Adaptive Learning as an innovative way of learning whose impact can be so significant that it can revolutionize the world of education. But what exactly is it?

In recent years, the use of educational technology is becoming increasingly popular around the world. There are many reasons for this: those who aspire to improve their students' results, those for flexibility in terms of time and location, and those who use these technologies as the only access to an education. New apps, platforms, streaming video, virtual reality, and strategies like gamification allow for environments outside of the classroom in schools and provide quality learning at a distance. The advent of devices like smartphones, tablets, and PCs in our lives allows for easy access to all of these tools.
However, especially after a long period of distance learning for the COVID-19 pandemic, educators have realized that the **traditional "one size fits all" method of instruction is no longer compatible with online learning**. Students are increasingly diverse in terms of culture, economic background, and learning style. There is a growing awareness among educators that students do not absorb information at the same rate and in the same way. As a result, the **idea of education that is customizable to the individual student is gaining momentum**. On the plus side, the technologies exist today to be able to solve this problem. Several educators, especially in the United States, are turning to e-Learning platforms that offer adaptive learning systems, or, in Italian, adaptive learning, to overcome this problem.

This article aims to shed some light on the concept of adaptive learning which, although very important for the world of e-Learning, still confuses many people. To do so, it breaks down as follows:

- Adaptive Learning: what is it and why is it being talked about more and more?
- What is Adaptive Learning in practice?
- What will Adaptive Learning bring in the future?
- What are the positive effects of Adaptive Learning?
- The problems for Adaptive Learning.
- Which continent dominates the market?

Adaptive Learning: what is it and why is it being talked about more and more?

Adaptive learning is an educational service that uses data analytics to provide an optimal learning experience based on student needs. The principle behind this mode of learning is as follows. The more a student interacts with a **digital adaptive learning platform**, the more the platform stores data about them. Over time, the data collected creates a profile on which a student's strengths and weaknesses and a host of other information can be identified. This data then allows an artificial intelligence to **interact with the student by giving him advice and presenting material more suited to his characteristics**, with the aim of improving performance. In other words, it's a teaching method that can adapt to the **specific needs of each student**.

In recent years, with the spread of devices such as smartphones, tablets and PCs and the increasing popularity of e Learning, the concept of Adaptive Learning is gaining more and more interest. In addition, the development of new products, the creation of partnerships between education companies and e-Learning software developers, and significant investments by private foundations such as the Bill and Melinda Gates Foundation, lead many experts to agree that the future of academic learning and corporate training will be dominated by the introduction of this technique. Some data seem to support this hypothesis. For example, according to the Consortium of School Networks, adaptive technologies were among the top 5 most deployed technologies in 2020.

What is Adaptive Learning in practice?

Manufacturers of e-learning-related services claim that the big change that makes adaptive learning so attractive is the introduction of data analytics technology into learning systems. This allows a computer with artificial intelligence to adapt educational content to the student's learning style and pace. Based on the student's reaction and content, the algorithms would respond in real time with suggestions, revisions, and interventions based on the student's needs and abilities. Additionally, these tools would be able to suggest more specific data such as what activities and through what medium a specific student's learning experience can be enhanced. The combination of adaptive learning platforms and predictive data analytics **allows for an improved learning experience for both the student and educators**. The student can learn more easily and in less time while the teacher has the ability to easily monitor the performance of each individual student.
Adaptive learning platforms are already on the market, and they are particularly popular in the United States. Although they are already up and running, many are updated frequently to improve the user experience, and especially as new tools are constantly being added, others deleted. This indicates that companies in the industry are constantly researching the development of optimal products, and it will be some time before we see how these products will develop.

What will Adaptive Learning bring to the future?

Although the prospects for the future look promising, to date it is not entirely clear how the concept of Adaptive Learning will take shape. The reasons can be summarized in three interconnected factors. The product factor, the technology factor and the research factor.
The product and technology factor is connected to adaptive learning platforms. The platforms that can offer these services are relatively new and are constantly **updating their products to make them better and better**. In fact, the popularity of this market is recent, which has allowed them to invest in the research and application of new technologies a short time ago. Given that the application of technologies in the world of education has only just begun, it is not yet clear, to date, which technologies will be retained and which will be discarded.

A similar argument applies to scientific research in this area. Several research studies attest to the benefits of eLearning, but this is a rapidly expanding world and, as such, new technologies are being introduced all the time. Research is needed to understand the impact of these technologies, but it too is in its infancy and needs to keep pace with the continued introduction of these technologies. Again, therefore, we will need to wait some time before we have conclusive answers.

What are the positive effects of Adaptive Learning?

Many believe that Adaptive Learning will pave the way for a true renaissance for the world of education. A report from Gallup and Inside Higher Ed indicates that two out of three college and university deans believe adaptive learning will have a positive impact on education.
A study by Education Growth Advisor states that when the company Knewton, a provider of adaptive learning platforms, began a partnership with Arizona State University, the **rate of students passing exams increased by 18 percent**, and **withdrawals from math courses dropped by 47 percent**. Colorado Technical University used an adaptive learning in an economics course and researchers found that the **rate of students passing exams increased by 27%**.
These are very significant numbers that, taking into account all schools in a state, could have a very positive impact on the world of education.

The Issues for Adaptive Learning

That the world of education will be completely revolutionized by Adaptive Learning is now certain. This realization, however, raises questions. In particular, institutions involved in providing education will need to be prepared for when this new methodology is fully introduced. Proper preparation and careful execution are vital to the implementation of adaptive learning. As a result, **institutions must work closely with the creators of adaptive learning platforms to create a learning environment that will drive optimal outcomes while respecting students**.

The main problems associated with this mode of learning are legal in nature and are primarily twofold: it departs from traditional teaching methods, and it collects sensitive student data.

The fact that it collects sensitive student data poses several problems in many states, since students' data, especially if they are minors, are protected by specific laws. The issue of **data management** and **privacy compliance** is an important one for all companies to consider. Each state, in fact, has different laws on these issues and companies need to make sure they comply with

all of them. Also, this way of learning is not considered as a traditional form of learning, and this can cause some problems. The pandemic has helped the creation of new laws to encourage the use of these tools during school closures, but often these are not sufficient to fully allow the integration of adaptive learning systems into formal learning. New legislation must therefore be awaited to allow adaptive learning to be fully utilized.

Which continent dominates the market?

A report by Emergen Research studying the adaptive learning market estimates that the adaptive learning market is expected to grow at a rate of **22.2% between now and 2028**. **North America** dominates the market, accounting for 39.4% of global revenues. This figure is due to the presence of a number of companies active in the field that are increasingly initiating partnerships with governments around the world. In addition, the United States is home to a significant number of the largest companies active in this field. The report indicates that the adaptive learning market is growing at a significant pace due to an increasingly radical use of data profiling software by educational institutions.

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Resources:

- Digital High-Quality Instruction Online in Response to Covid-19
- Challenges and contexts in establishing adaptive learning in higher education: findings from a Delphi study
- Adaptive Learning: Are We There Yet?
- Adaptive Learning Platforms: Creating a Path for Success
- Affirmative Action, Innovation and the Financial Future: A Survey of Presidents
- Personalized adaptive learning: an emerging pedagogical approach enabled by a smart learning environment