Keeping up with the latest eLearning trends can be a challenge for even the most dedicated educator. As a quick primer, however, eLearning is moving towards more inclusive and collaborative approaches. Current digital education trends are also moving towards more engaging formats, relying heavily on AR/VR and gamification to grab and hold learners’ interest. Plus there are a few unexpected developments in eLearning.

Here are ten of the most popular eLearning trends to watch out for and don’t forget to check out ViewSonic’s solution to even further [empower classroom collaboration!](https://www.viewsonic.com/education/classroom-collaboration?utm_source=ViewSonic%20Library&utm_medium=blog&utm_campaign=LIBRARY%20TRAFFIC%20-%20Classroom%20Collaboration)

eLearning is here to stay. Dusty blackboards, smudged overhead projectors, and over-saturated photocopies sound like many people’s education experience. But take solace in knowing that, in many schools, those factors are in the past.

For those who don’t know what it is, eLearning refers to learning that utilizes electronic means to create a more dynamic and instructive learning environment. This manifests through the use of interactive whiteboards, online classes, and so on.

Rather than developing as a niche concept in the education sector, eLearning is rapidly becoming the dominant means to pass on knowledge to those of all ages. However, since it is still quite new, the concept is still evolving and changing on a constant basis. At ViewSonic, for instance, many tenets of eLearning can be seen in its [myViewBoard education platform](https://www.viewsonic.com/education/myviewboard?utm_source=ViewSonic%20Library&utm_medium=blog&utm_campaign=LIBRARY%20TRAFFIC%20-%20myViewBoard%20for%20Education" \t "_blank).

To that end, we’ve identified 10 trends that we believe indicate the future of eLearning and its role in the classroom. For those teachers, professors, parents, students, and administrators who are looking to make a wise investment in the future of education, this guide is for you.

1. Adaptive Learning

Adaptive learning is a style of education where resources, activities, projects, and assignments are tailored to each student’s individual needs. In the context of eLearning, the implementation of adaptive learning is usually performed by way of established algorithms and assessments, as opposed to the potentially arbitrary determinations of teachers themselves.

Thus far, adaptive learning has been largely experimental, with companies and competitors having spent the past couple of years working out the kinks and engaging in small-scale execution. As eLearning continues to develop, the experiments will end and the widespread adoption will begin. Already, the major eLearning platforms are offering adaptive learning services, and there’s no reason that the trend won’t continue for the foreseeable future.

2. Social Learning

Social learning takes the base components of human interaction and group dynamics and applies them to the modern technological age. Online forums, class-wide chatrooms, file-sharing platforms – with social learning in the electronic space, collaboration has never been more productive, efficient, and seamless. Now, teammates can offer insight and support from anywhere, whether it be their classroom, their homes, or their nearby coffeeshops.

As social learning applications continue to develop, more and more collaborative tools will likely enter the fray for market dominance. What’s more is that, outside of individual classrooms and group project scenarios, social learning as a whole could grow to become the spine of school-wide curriculums everywhere.

3. Video learning

Although it’s a bit of a generalization, they say that there are three types of learners – visual, auditory, and kinesthetic – that excel best in education when faced with videos, vocals, and practical demonstrations, respectively. For many years, despite this dichotomy, auditory learners were the only group properly served by the standard lecture/note-taking classroom format. With the advent of eLearning, that’s no longer the case, with video learning becoming more and more of a fixture in classrooms everywhere.

From video-based lectures to instructional videos, video learning has certainly come a long way from the shared-classroom televisions of old. Today, and going forward, there is nary an application that cannot be improved by the use of video learning. As such, there’s no reason to expect a backslide anytime soon.

4. Artificial Intelligence

It’s safe to say that artificial intelligence, or AI, has surpassed its original reputation of being the evil impetus behind HAL 9000 and the Y2K conspiracy theories. Today, what with Apple’s Siri, Microsoft’s Cortana, and your everyday text-based chatbots, AI has experienced at-home integration around the world.

Beyond simple smartphone commands, AI has found a use in the context of eLearning. Backing up the concepts behind adaptive learning, AI is not only able to guide students through courses, but it can also help inform learning predictions and on-the-fly personalization. The potential applications for this currently seem limitless, considering the presence of AI in several industries outside of education. Within, however, consumers and instructors alike can expect more and more sophistication, with more flexibility permitted when it comes to alternative learning styles and needs.

5. Microlearning

It’s common sense that many students, regardless of their age, may be daunted at the prospect of large, multi-phase projects. Those students, as well as collaborative classrooms everywhere, have found much greater successful by breaking up projects, lessons, and other learning materials into manageable chunks. These so-called chunks may manifest as video lectures, readable text, interactive activities, to name just a few applications.

Otherwise known as microlearning, instructors have found that lessons, in addition to online modules, yield greater and faster retention when, for example, a 2-hour long lesson is broken up into 4 30-minute long sessions. Microlearning is indicative of a trend that goes beyond eLearning itself, and into the realm of traditional classroom spaces. As such, it’s clear that the common implementation of microlearning is not yet complete.

6. Gamification

It doesn’t matter whether you’re five years old or fifty, learning is always more interesting, not to mention more digestible, when it’s fun. Referred to as [gamification](https://www.viewsonic.com/library/education/gamification-in-education/), this facet of eLearning attempts to make education fun!

It isn’t all about fun and games, however, as there are proven benefits surrounding the initiation of games following the introduction or review of lessons. First off, it can provide immediate application of, and interaction with, the material. When understanding is up, so too is engagement, retention, grades, and overall classroom happiness.

Given the large swath of positive results, there’s no reason that game-based learning solutions will not continue to be implemented in classrooms, both digital and physical, for the foreseeable future. Moreover, when it comes to the somewhat impersonal nature of eLearning in particular, gamification of the industry is not just welcomed, it’s ideal.

7. Mobile Learning

Although not strictly a part of what comprises ‘traditional’ eLearning, the evolution of [mobile learning, or mLearning](https://www.edgepointlearning.com/blog/what-is-mlearning/), is certainly an appropriate trend to consider. Not too long ago, the concept of doing anything on your mobile device beyond simple phone calls and 8-bit games was a pipe dream. Fast forward to today, just about everything is possible, and everyone appreciates the ability to do things while on-the-go.

When it comes to mLearning, however, there is still a slight bit of way to go before it becomes fully viable. The past couple of years have been very kind to it, in that respect, with phone-based language-learning applications coming to the fore. While it’s a decent step, mLearning architectures still need to find ways to embrace the same learning facets trends that eLearning managed to do before it can become widespread and commonplace. That said, in the future, there’s no doubt that mLearning will grow to be huge.

8. Augmented & Virtual Reality

360-degree visuals, graphics overlays, and an explorable interface – these are just a few applications for augmented and virtual reality in the context of eLearning. Already, the pre-existing paradigm of a teacher scribbling on a blackboard has gone out the window and there’s nowhere to go, but up.

In practice, augmented and virtual reality allows practitioners of eLearning to fully immerse their students into the subject matter, regardless of whether it involves mathematics, science, history, or literature. What’s more is that augmented and virtual reality also serve to take the other factors of eLearning to all-new heights. Video learning, gamification, and mobile learning have never been so immersive when paired with augmented and virtual reality, and the technology is improving all the time, so look forward to seeing this eLearning trend continue for a while yet.

If you want to learn more about the benefits of augmented and virtual in education, check out [this article!](https://www.viewsonic.com/library/education/6-benefits-and-5-examples-of-augmented-reality-in-education/)

9. Learning Management Systems

In many collaborative environments and workplaces, employers and managers commonly implement what is known as a content management system, or CMS, to create and store digital content. Recently, this concept has expanded into the world of eLearning. With the advent of [learning management systems (LMS)](https://searchcio.techtarget.com/definition/learning-management-system), instructors and other eLearning practitioners are able to develop, document, and administer the courses and curriculums that are produced.

Considering the behind-the-scenes nature of LMSs, it has become easier than ever to simultaneously plan ahead and course-correct. In either case, this sort of content curation works is permitted by way of an LMS user’s ability to share information and integrate materials at the last minute. As modern forms of learning, and eLearning in particular, become more and more digitized and supported, the availability of an LMS will make lesson planning and management a breeze, thus doing away with the old analog methods for good. As such, LMSs are here to stay.

10. Learning & Development

Learning Management Systems aren’t only about lesson planning and implementation. More to the point, they assist teachers and other behind-the-scenes figures to gather actionable data and other analytic factors. Not only does this help all involved to properly evaluate the effectiveness of a lesson and/or overall course, but it also plays a key role in Learning & Development.

Otherwise known by its shortened moniker, L&D, Learning, and Development is a management strategy that correlates individual performance with overall institutional goals. While this is commonly applied in a variety of industries and contexts, we are obviously here to discuss its specific role in eLearning. Therein, those working with L&D assist teachers in applying the gathered data in a way that improves that which is lagging in their lessons and courses.

Gamification, augmented reality, microlearning, video learning, social learning, and adaptive learning processes were all borne out of data-driven indications of success. As eLearning trends continue upward, the role of L&D, as well as data and analytics, will continue to expand in turn. After all, it would be difficult to advance and improve without the facts to back it up.

Final Thoughts

No matter which EdTech trend you choose to implement, the benefits are certainly clear. Giving your students an fun and unique way is important to not only making sure they learn best, but are happy in their educational experience.

If you are ready to implement some of these new EdTech trends in your classroom, check out our solution for [creating engaging learning spaces!](https://www.viewsonic.com/education/visually-engage-students?utm_source=ViewSonic%20Library&utm_medium=blog&utm_campaign=LIBRARY%20TRAFFIC%20-%20Student%20Engagement)

# Learning

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## Abstract

Guidance work is needed to learn about the current state of e-learning and to guide future research. In recent studies, e-learning environments appear to be under different headings in recent years. These new topics are mainly aimed at providing an up-to-date explanation on e-learning in this section. New trends in e-learning will be covered under artificial intelligence (AI), micro credentials, big data, virtual and empowered reality, blended learning, cloud e-learning, gamification, mobile learning, Internet of things, and online video. With this study, it is aimed to shed light on the concept of e-learning. In addition, e-learning environments focus on new possibilities for learners. Everyday, e-learning environments bring out new antagonistic

concepts. As these new concepts rapidly entered our lives, they began to become indispensable materials in the field of education. New e-learning environments are being used as platforms that are related to each other. They essentially support the concept of e-learning.

### Keywords

* e-learning
* learning technology
* new trends in e-learning

## Author Information

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## 1. Introduction

As in many subjects, new concepts of technology entered our life in education. The increase in the number of students, technological developments, new learning theories and personal needs have led to the introduction of these concepts into our lives. Moreover, these concepts have undoubtedly brought along interdisciplinary studies. In recent years, rapid and low-cost Internet technology and technical developments in information technologies (IT) have also been supporting this process. The development of this process certainly ensured the formation of new ways of learning about e-learning.

E-Learning is a computer-based educational tool or system that enables you to learn anywhere and anytime [[1](https://www.intechopen.com/chapters/60282#B1)]. e-Learning strategies are spreading to include different education sectors. In this regard, learners indicate that e-learning has made education effective. It is also stated that the most basic benefit of e-learning is flexibility [[2](https://www.intechopen.com/chapters/60282#B2)]. e-Learning can be considered as a motivation factor in terms of self-efficacy. Students can organize their motivations on e-learning themselves [[3](https://www.intechopen.com/chapters/60282#B3)]. e-Learning also serves institutions and organizations that want to provide consistent education in more than one place [[4](https://www.intechopen.com/chapters/60282#B4)].

How can we tell the difference between traditional learning and e-learning? Traditional education is a way for the teacher to present the learning material to the students in the class. The main difference between e-learning and class-based learning is the way in which education is transmitted. In fact, this is a very basic difference. In traditional learning, the teacher can fully control the learning environment by adapting it and, if necessary, changing it. In traditional learning, the teacher’s ability, personality, quality, adaptation to the learning situation, and the creation of course material affect the learning-teaching performance [[5](https://www.intechopen.com/chapters/60282#B5), [6](https://www.intechopen.com/chapters/60282#B6)].

### 1.1. What are the new e-learning trends?

New focus of e-learning environments is to identify the content area and individualization. In this sense, learners will be included in different e-learning environments. A personal application can be made to be a candidate. In addition, content is rapidly increasing in our time. For this reason, new e-learning materials for learners need to be developed. The e-learning environments that have recently taken place in our lives are artificial intelligence (AI), micro credentials, big data, blended learning, virtual and empowered reality, cloud e-learning, gamification, mobile learning (m-learning), Internet of objects, and online video titles. These new e-learning trends offer significant benefits, such as creating the best education and development plan, creating it in a flexible environment, and creating and maintaining a personal learning environment and continuity.

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## 2. Overview of new e-learning trends

Let’s take these new e-learning trends in turn. Let’s also look at the benefits of these e-learning environments in terms of learners.

### 2.1. Artificial intelligence

It is necessary to ignore the individual differences of learners without learning. It is imperative to configure the learning environment and personalize teaching for each user. Artificial intelligence algorithms are used to design e-learning environments that will be created in this way.

New technologies are now seen as complementary support, not as core techniques of educational practice. The use of artificial intelligence (AI) techniques is beneficial to learners in this sense [[7](https://www.intechopen.com/chapters/60282#B7)]. Artificial intelligence (AI) operating systems, programming languages, and modern software are realized through computer science. Artificial intelligence (AI) is linked to “mainstream” computer science studies, time-sharing, interactive interpreters, linked list data types, automatic storage management, and so on. Some of the key concepts of artificial intelligence are object-oriented programming and graphical user interfaces and integrated program development environments. Artificial intelligence (AI) is in the pattern with evolutional algorithms, fuzzy logic, and neural networks concepts [[8](https://www.intechopen.com/chapters/60282#B8), [9](https://www.intechopen.com/chapters/60282#B9)].

Education and artificial intelligence (AI) are two sides of the same medal: education helps learners learn and expand the accumulated knowledge of a society, and artificial intelligence (AI) provides techniques for understanding the mechanisms underlying thought and intelligent behavior. Because of this, today’s artificial intelligence-assisted e-learning scenarios are widely used by educational institutions to provide better teaching and learning experiences throughout their training activities. Artificial intelligence (AI) leads to the development of a wide range of artificial intelligence tools as theory and practice. Sometimes, these tools, working under the guidance of a human being and sometimes without an external guide, can solve or help solve a growing number of problems. Artificial intelligence (AI) has produced many important results for students, teachers, the general education system, and societies over the past 50 years ([Figure 1](https://www.intechopen.com/chapters/60282#F1)) [[10](https://www.intechopen.com/chapters/60282#B10), [11](https://www.intechopen.com/chapters/60282#B11), [12](https://www.intechopen.com/chapters/60282#B12)].



#### Figure 1.

What contributes to artificial intelligence? [13].

### 2.2. Micro credentials

In education, teachers need to create experiences for students and to experience competence-based learning. Micro credentials can help teachers build personalized, competency-based learning paths and be recognized for a wide range of valuable and important learning experiences. More demand for micro credentials learning plays a central role in how the learner will be presented and evaluated. Micro credential is a focused, short delivery based on competency. Students will receive “deep” knowledge of a specific topic and will show the application of this knowledge [[14](https://www.intechopen.com/chapters/60282#B14), [15](https://www.intechopen.com/chapters/60282#B15)].

The micro credential is not a single-size fit, it is personalized instead. The micro credential honors the fact that all training professionals and students need something different. And with digital tools, this learning can take place anytime and anywhere [[16](https://www.intechopen.com/chapters/60282#B16)]. Micro credential offers a strategy for teachers to expand their learning and to confirm and accept recognition as they progress through vocational learning. One of the reasons why micro credential is attractive is that it divides complex teaching skills into basic pieces. Trainees can develop and demonstrate competence at the beginning of each instruction and then link these skills to master competence in complex skills. Teachers can choose which skills or which parts of a skill they will most benefit from professional practice and demonstrate competence by offering what they can do [[17](https://www.intechopen.com/chapters/60282#B17)].

### 2.3. Big data

Recent developments in database technologies have made it possible to accumulate and maintain large and complex amounts of data from many forms and from multiple sources. In addition, this complex data is meaningful, and there are analytical tools that can transform the mold. These tools are called big data. It is very important to put teachers into “big data” discussions, because they are the ones that will provide the progress in research and analysis. The projects that teach teachers about which pedagogical techniques are most effective, or how they have changed the way students learn, make it possible for instructors to do a better job. Adapting education to individual students is one of the greatest benefits of technology, and great value helps teachers personalize their learning. In this sense big data holds an important place in education ([Figure 2](https://www.intechopen.com/chapters/60282#F2)) [[18](https://www.intechopen.com/chapters/60282#B18), [19](https://www.intechopen.com/chapters/60282#B19)].



#### Figure 2.

Three essential stages of big data [19].

Student data collected by online learning systems are examined to develop predictive models by applying educational data mining methods that classify or relate data. These models play a key role in shaping adaptations or interventions based on model predictions, to promote adaptive learning systems that can be used to inform learners outside academic services to support what they can learn or to modify student experiences. Two areas specific to big data use in education can be mentioned. One of them is educational data mining and the other is learning analysis [[20](https://www.intechopen.com/chapters/60282#B20), [21](https://www.intechopen.com/chapters/60282#B21)]. Big data enables a wide variety of data sources to be added, allowing analysis of these various data types. Analytical and predictable options are expanding. This allows for better progress in education [[22](https://www.intechopen.com/chapters/60282#B22), [23](https://www.intechopen.com/chapters/60282#B23)].

### 2.4. Virtual and empowered reality

With the use of technologies such as virtual and empowered reality, students can be more visually aware of their classmates and chat with them in real time. They can get immediate feedback from their teachers and get the feeling of being in the same spot with their peers despite their remote physical location. These shared virtual environments also facilitate simultaneous viewing of classroom learning materials and allow group discussions of learning content to be shared at the same time. The use of the virtual reality environment in education and training, which brings many innovative advantages to people of all ages, is impressive [[24](https://www.intechopen.com/chapters/60282#B24), [25](https://www.intechopen.com/chapters/60282#B25)].

The greatest advantage of using virtual reality to teach purposes in the field of education is that it is highly motivating. In terms of their use in the field of education, for example, when modeled in a molecule virtual and empowered reality, students can examine it in detail and become familiar with molecules, wander, and parts. Virtual and empowered reality allows an object to be examined from a certain distance and shows the whole rather than a piece. The virtual and empowered reality model of a neighborhood offers a different perspective to the connections between residents, buildings, streets, and open spaces [[26](https://www.intechopen.com/chapters/60282#B26)].

It is also possible to interact based on cooperation with virtual and empowered reality. Therefore, virtual environments also increase the interaction and cooperation between students. These advantages increase student participation by using engaging experiences, reducing attention distractions, and creating positive attitudes when students receive better feedback to easily reach their learning goals [[27](https://www.intechopen.com/chapters/60282#B27)].

### 2.5. Blended learning

Blended learning is a case in which a lesson takes place partially online and partly in other ways. In other words, students learn what they learn online in face-to-face environments. In addition, students have control over their own speed. Some researchers believe that this link between a method in a field or in the subject should be included in the definition and the basis for blended learning [[28](https://www.intechopen.com/chapters/60282#B28)].

Blended learners have a lot to contribute to the field of education. Blended learning enables an enhanced learning experience by enabling various learning environments. It encourages reinforcement. It increases the accessibility of learning materials. It helps create a sense of community and cooperation through forums to share collaborative and communication platforms and learning experiences. Blended learning models center the student learning process and benefit from the power of technology to create learning environments that are more compelling, effective, and successful [[29](https://www.intechopen.com/chapters/60282#B29), [30](https://www.intechopen.com/chapters/60282#B30)].

Blended learning is a concept framing the teaching learning process that includes teaching supported by face-to-face and information technologies. Blended learning includes direct teaching, indirect teaching, collaborative teaching, and individualized computer-aided learning concepts [[31](https://www.intechopen.com/chapters/60282#B31)].

Benefits of blended learning are as follows ([Figure 3](https://www.intechopen.com/chapters/60282#F3)) [[32](https://www.intechopen.com/chapters/60282#B32)]:

* Expands the areas and opportunities available for learning
* Supports course management activities
* Supports the provision of information and resources to students
* Interacts and motivates students through interaction and collaboration



#### Figure 3.

Blended learning [33].

### 2.6. Cloud e-learning

The day-to-day growth of data hosting and data processing services on the Internet has enabled the creation of a new concept. Cloud computing for operating companies in various areas such as planning and correction helps to meet the increasing demand. Cloud computing is a promising infrastructure that provides computing and storage resources as a service. Cloud computing can provide services at anytime/anywhere that are accessible from any device from where the users’ services or applications are located. All of this and more will be the responsibility of cloud computing [[34](https://www.intechopen.com/chapters/60282#B34), [35](https://www.intechopen.com/chapters/60282#B35)].

A learning cloud is a cloud computing technology in the field of e-learning, a future e-learning infrastructure, including all hardware and software computing resources to deal with e-learning. After virtual computing resources, they can be services for renting computing resources of educational institutions, students, and businesses ([Figure 4](https://www.intechopen.com/chapters/60282#F4)) [[34](https://www.intechopen.com/chapters/60282#B34)].



#### Figure 4.

e-Learning services using cache management and cloud computing [36].

### 2.7. Gamification

Gamification is developing as an academic concept. To achieve this, we need to determine whether the existing gamification structures of the period are significantly different from the research areas and how to relate this to existing sites. Gamification offers new research opportunities. Gamification is the use of game design elements in out-of-game contexts [[37](https://www.intechopen.com/chapters/60282#B37)]. Gamification is used to motivate gamers to participate in a specific context. In other words, it is the application of fun layers. Most of the existing gamification applications seem to be focused on offering points and rewards to motivate users. Gamification can be a new term. However, game-thinking and game mechanics ideas are not entirely new. These concepts were already used in problem-solving [[38](https://www.intechopen.com/chapters/60282#B38), [39](https://www.intechopen.com/chapters/60282#B39)].

Gamification is involved in e-learning. In this sense, gamification is the use of a pedagogical system developed in game design but applied in a nonplay context. Game, scoring, level, rosette, or game mechanics are also included in gamification. These are applied in the manner in which a course or module is taught. Game-based learning or play is sometimes used interchangeably. However, they both actually indicate two different pedagogical methods. Game-based learning asks students to play in games designed to enhance their learning rather than integrating the principles of game design into standard classroom instruction. Besides focusing on playing games, they can also be of interest to anyone who wants to introduce game-based learning to their teaching. The addition of game features to learning environments may contribute to the less motivated students’ own learning processes and their interactions with other learners ([Figure 5](https://www.intechopen.com/chapters/60282#F5)) [[40](https://www.intechopen.com/chapters/60282#B40), [41](https://www.intechopen.com/chapters/60282#B41)].



#### Figure 5.

The relevance of serious games, gamification, and playful interaction [37].

### 2.8. Mobile learning (m-learning)

Today, many technological devices are manufactured in portable form and used by people. These devices shape the daily lives of users differently. Until recently, mobile devices were limited to social communication, and there were few people using it pedagogically. At present, the teaching technology delivered through mobile technology is mostly social and economic ([Figure 6](https://www.intechopen.com/chapters/60282#F6)) [[42](https://www.intechopen.com/chapters/60282#B42)].



#### Figure 6.

The three concepts of mobile learning [42].

Students can control where and when they want to learn. In addition, all people have the right to access learning materials and information to raise their quality of life, regardless of where they live, their status, and their culture. Mobile learning through the use of mobile technology allows learners to access learning materials and information where they want it. Students do not have to wait a certain amount of time or go to one place to learn. With mobile learning, students are empowered to learn from where they want. They can use wireless mobile technology for learning where they can access learning materials. In this sense, smartphones, tablets, laptop computers, and other mobile devices are great opportunities for learning mobile to offer new and exciting educational experiences. Mobile learning focuses mainly on the development of mobile applications and software platforms used to create digital content in the form of digital textbooks for e-learners and access to educational resources through mobile devices [[43](https://www.intechopen.com/chapters/60282#B43), [44](https://www.intechopen.com/chapters/60282#B44), [45](https://www.intechopen.com/chapters/60282#B45)].

### 2.9. Internet of things

The Internet of things (IoT) refers to a kind of network that connects everything with the Internet based on prescribed protocols, through information-sensing equipment that conduct information exchange and communication to provide intelligent recognition, positioning, monitoring, and management. With the advent of the Internet of things (IoT), Internet connections now extend to the physical objects that are not computers in the classical sense and actually serve many other purposes [[46](https://www.intechopen.com/chapters/60282#B46), [47](https://www.intechopen.com/chapters/60282#B47)].

The purpose of the Internet of things (IoT) is to ensure that things are connected to anything, any place, any person, any way/network, and any service in an ideal way. With the Internet of things (IoT), three main reasons are (1) a common understanding of users and devices, (2) software architects, and (3) distributed communication networks for processing and communicating where contextual information is relevant, providing analytical tools aimed at autonomous and intelligent behavior. With these three main reasons, intelligent connection and context sensitive calculation can be realized. The convergence of wired and wireless control, communications and information technologies that connect many new technologies, various subsystems, and those operating under a jointly managed and intelligently controlled platform is concerned with the Internet of things (IoT) ([Figure 7](https://www.intechopen.com/chapters/60282#F7)) [[48](https://www.intechopen.com/chapters/60282#B48)**–**[50](https://www.intechopen.com/chapters/60282#B50)].



#### Figure 7.

Internet of things (IoT) [51].

### 2.10. Online videos

Considering the increase in online education, it is important that students have easier access to video content and user familiarity. It is about the participation and use of video content and achievements of students and instructors in video environments. Online videos have the same content and subject matter as lesson conferences, labs, assignments, and exams. In addition, online videos are portable so that a student can connect at anytime. The student can work at this rate at the speed of individual learning. Course processing method is slower and step by step than classroom courses [[52](https://www.intechopen.com/chapters/60282#B52), [53](https://www.intechopen.com/chapters/60282#B53)]. Video material can be used to enhance learning resources by showing real-life scenarios, explaining concepts, observing social groups, and acting as triggers for discussion. They can also bring learners’ expertise and perspectives into their learning experience and inspire them to debate and learn by bringing them to life [[54](https://www.intechopen.com/chapters/60282#B54)].

Although the impact of video and multimedia technologies on educational output is an ongoing research area, the pedagogical impact of a video can be summarized in three basic concepts [[55](https://www.intechopen.com/chapters/60282#B55)]:

1. Interaction with content (the student is interested in visual content, orally, taking notes or thinking or applying concepts).
2. Engagement (the student is connected to the visual content, whether it is voluntary or real time, drawn by the video).
3. Knowledge transfer and memory (student concepts can be better remembered and retained in other teaching contexts).

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## 3. Conclusion

This study tried to give information about the current status of e-learning. Although the concept of e-learning has become a new concept in the field of education, it has made rapid progress. In addition to the rapid progress of e-learning, many new concepts have also gained a lot of literature. These concepts are listed in this study as follows: artificial intelligence, micro credential, big data, virtual and empowered reality, blended learning, cloud e-learning, gamification, mobile learning, Internet of things, and online video. These new e-learning trends are explained in this study. In addition, the innovations provided by learners to e-learning environments are explained.

Each of the e-learning environments comes to the forefront with its different features. These concepts are included in the literature under different study titles. But looking at the literature, it is seen that the new trends in e-learning progress step by step. Each new trend actually supports the e-learning environment. For example, with blended learning, online learning and classroom learning are taught. In this way, learners’ perception of their learning functions in the most appropriate environment is ensured [[56](https://www.intechopen.com/chapters/60282#B56), [57](https://www.intechopen.com/chapters/60282#B57)]. Cloud e-learning environment is used to support e-learning environments. e-Learning environments enable identity management, services, data security, application, and resources to be controlled [[58](https://www.intechopen.com/chapters/60282#B58)]. New e-learning trends are new concepts that support e-learning with different features in this way. These concepts will quickly take place in education in the coming period.

Researchers in the field of new trends in e-learning can conduct research on ten new topics mentioned. Theoretically, more theoretical studies are observed. So, researchers can be found working in the field of application. New trends support each other as explained in this study. That is why researchers can work with new trends together in a related way. For example, gamification and virtual and empowered reality can work together. Or, artificial intelligence and micro credential issues can work together. It is thought that collaborative work to be done in this way may be more effective. In the new era, researchers can suggest that new e-learning environments should be addressed in education rather than in class applications of e-learning.

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In education, new technology concepts have been introduced due to the increase in students, technological advancements, new learning theories, and personal needs. The introduction of these concepts has brought about interdisciplinary studies and has been supported by the rapid and low-cost internet and information technology developments. This has led to the development of e-learning as a new way of learning. E-learning is a computer-based educational tool that provides flexibility and can be considered a motivation factor for self-efficacy. It is also beneficial for institutions and organizations that want to provide consistent education in multiple locations. The main difference between traditional learning and e-learning is in the way education is transmitted, with traditional learning being teacher-controlled, while e-learning allows learners to organize their motivations themselves. Additionally, in traditional learning, the teacher's ability, personality, quality, adaptation to the learning situation, and the creation of course material affect the learning-teaching performance.

Staying updated on the latest eLearning trends can be a daunting task, even for the most devoted educators. As a brief introduction, eLearning is shifting towards more collaborative and inclusive approaches. The current trends in digital education are also leaning towards more interactive formats, relying on AR/VR and gamification to engage and maintain learners' interest. Additionally, there are a few unexpected developments in eLearning.

Here are ten of the most popular eLearning trends to keep an eye on, and don't forget to explore ViewSonic's solution to further enhance classroom collaboration! E-Learning has become a permanent fixture in education, replacing outdated methods like dusty blackboards, smudged overhead projectors, and over-saturated photocopies. E-Learning refers to learning that employs electronic means to create a more interactive and informative learning environment, such as interactive whiteboards, online classes, and more. Rather than being a niche concept, eLearning is quickly becoming the primary method of knowledge transfer for learners of all ages. However, since it's still a relatively new concept, it's constantly evolving and changing. At ViewSonic, the myViewBoard education platform incorporates many eLearning principles.

The latest trend in e-learning environments is to focus on individualization and content identification. This means that learners will be included in various e-learning environments and can apply to a personal program. Additionally, due to the rapidly expanding content landscape, new e-learning materials must be developed to keep pace with the demand for knowledge. Recent developments in e-learning include artificial intelligence (AI), micro credentials, big data, blended learning, virtual and augmented reality, cloud-based e-learning, gamification, mobile learning (m-learning), the Internet of Things (IoT), and online video content. These new e-learning trends offer significant advantages, such as creating tailored education and development plans, providing flexible learning environments, and enabling the creation and maintenance of personalized learning environments with ongoing support.

Adaptive learning is a type of education that customizes resources, activities, projects, and assignments to meet the unique needs of each student. In eLearning, adaptive learning is generally implemented through established algorithms and assessments, rather than relying on teachers' potentially arbitrary decisions.

Up until now, adaptive learning has been largely experimental, with companies and competitors spending the past few years refining the concept and testing it on a small scale. However, as eLearning continues to evolve, the experimentation phase will come to an end, and widespread adoption of adaptive learning will begin. Major eLearning platforms already offer adaptive learning services, and there is no reason to believe this trend won't continue in the foreseeable future.

The concept of social learning applies the basic components of human interaction and group dynamics to the modern technological age. This can be achieved through the use of various online platforms such as forums, chatrooms, and file-sharing tools. With social learning in the digital realm, collaboration has become more efficient, seamless, and productive. Now, individuals can offer support and insight from any location, whether it be a classroom, home, or a nearby coffee shop. As social learning continues to evolve, it is likely that more collaborative tools will enter the market for wider adoption. Additionally, social learning could potentially become a fundamental part of school-wide curriculums beyond individual classrooms and group projects.

Although it may be oversimplified, some people believe that learners can be grouped into three categories based on their preferred learning style: visual, auditory, and kinesthetic. Visual learners learn best through videos, auditory learners through audio-based resources, and kinesthetic learners through hands-on activities. Historically, the standard lecture/note-taking classroom format served auditory learners the best. However, with the rise of eLearning, video learning has become increasingly popular in classrooms everywhere, serving all types of learners. Video-based lectures and instructional videos have replaced the shared-classroom televisions of the past. Going forward, video learning will likely continue to play a major role in education as it can be applied to nearly any subject matter.

The use of artificial intelligence, or AI, has come a long way from its original association with sci-fi villains like HAL 9000 and Y2K paranoia. With the advent of virtual assistants like Apple's Siri and Microsoft's Cortana, as well as the proliferation of chatbots, AI has become a ubiquitous presence in many people's daily lives. In the realm of eLearning, AI has proven to be a valuable tool that can guide students through courses and provide personalized learning experiences based on data-driven insights. As AI technology continues to advance and be integrated into other industries, its potential applications in education seem almost boundless. This will likely lead to more sophisticated and flexible eLearning environments that cater to diverse learning needs and styles.

Breaking up projects, lessons, and other learning materials into manageable chunks has become a widely accepted practice among students and collaborative classrooms, regardless of age. This approach, commonly known as microlearning, involves dividing content into smaller, more easily digestible portions that can take various forms, such as video lectures, readable text, or interactive activities. Online modules and lessons delivered in shorter sessions have shown to improve retention rates, and this trend is not limited to eLearning environments but also extends to traditional classrooms. Although microlearning has gained popularity, there is still room for further implementation and adoption.

To make learning more interesting and easier to understand, gamification has become a popular aspect of eLearning, regardless of age. By incorporating games into the learning process, known as gamification, education can be made fun. However, gamification is not solely for entertainment purposes, as it has been proven to offer numerous benefits, such as immediate application of learned material and greater engagement, retention, grades, and overall classroom satisfaction. Given the positive outcomes, it is expected that game-based learning solutions will continue to be widely implemented in both digital and physical classrooms. Additionally, gamification is particularly suitable for the impersonal nature of eLearning, making it an ideal choice for the industry.

Although not traditionally associated with eLearning, mobile learning or mLearning is a trend worth considering. Not too long ago, the idea of doing anything other than making phone calls and playing basic games on a mobile device seemed like a fantasy. Nowadays, however, mobile devices are capable of almost anything, and people appreciate the convenience of being able to accomplish tasks on-the-go. While mLearning has made significant strides in recent years, there is still room for improvement before it becomes a fully viable option. The emergence of language-learning apps for mobile phones is a promising development, but mLearning still needs to incorporate the same effective learning strategies that eLearning has already mastered. Nevertheless, there is no doubt that mLearning will continue to grow and become more popular in the future.

The application of augmented and virtual reality in eLearning has revolutionized the traditional method of teaching, where teachers used to rely on blackboards to convey the subject matter. Nowadays, learners can experience 360-degree visuals, graphics overlays, and an explorable interface that immerses them fully into the topic being taught, be it mathematics, science, history, or literature. Moreover, this technology has taken other eLearning trends such as video learning, gamification, and mobile learning to new heights, making them more immersive and engaging than ever before. As technology advances, the use of augmented and virtual reality in eLearning is expected to continue growing in popularity.

The implementation of a content management system (CMS) is a common practice in many collaborative workplaces, allowing for the creation and storage of digital content. In recent times, this concept has expanded into the realm of eLearning, with the introduction of learning management systems (LMS). These LMSs enable eLearning practitioners and instructors to develop, document, and administer courses and curriculums more efficiently. Thanks to the behind-the-scenes nature of LMSs, it has become easier than ever to both plan ahead and make course corrections as needed. LMS users can share information and integrate materials at the last minute, facilitating content curation. With the increasing digitization and support of modern forms of learning, the availability of an LMS makes lesson planning and management effortless, replacing the old analog methods for good. Therefore, it is evident that LMSs are a crucial component of eLearning and are here to stay.

The application of Learning Management Systems extends beyond lesson planning and execution. Rather, they aid instructors and other support staff in gathering actionable data and analytics. This not only helps them evaluate the effectiveness of lessons and courses but also plays a crucial role in Learning and Development (L&D). L&D is a management strategy that links individual performance with organizational objectives. Although this is used in various industries, we are specifically focusing on its relevance in eLearning. L&D professionals help instructors apply collected data to improve areas that need attention in their lessons and courses. The success of gamification, augmented reality, microlearning, video learning, social learning, and adaptive learning techniques is all based on data-driven evidence. As eLearning trends continue to rise, the importance of L&D, data, and analytics will continue to grow. This is because progress and improvement cannot be achieved without factual evidence to support it.

In order to provide effective e-learning experiences, it is crucial to acknowledge and address the unique needs and learning styles of each individual learner. This is where the use of artificial intelligence (AI) algorithms comes in. By utilizing these algorithms, personalized learning environments can be created to cater to each user's specific needs.

In the past, new technologies were seen as supplementary tools to traditional educational practices, but now they are considered essential. AI techniques have proven to be particularly useful in enhancing the learning process for students [7]. The development of AI systems, programming languages, and modern software is a product of computer science, with concepts like time-sharing, interactive interpreters, linked list data types, and automatic storage management all linked to AI. Object-oriented programming, graphical user interfaces, and integrated program development environments are also key concepts in the field of AI, alongside evolutionary algorithms, fuzzy logic, and neural networks [8, 9].

Education and AI are interconnected, with education facilitating knowledge accumulation and learning, while AI provides methods for understanding the mechanisms underlying thought and intelligent behavior. Nowadays, AI-assisted e-learning scenarios are widely utilized by educational institutions to enhance their teaching and training activities. AI tools continue to evolve and provide practical solutions to an increasing number of problems, both with and without human guidance. Over the past 50 years, AI has produced numerous important results for students, teachers, and the general education system, as well as for society as a whole [10, 11, 12].

Teachers play a crucial role in creating meaningful experiences for students and enabling them to learn based on competencies. To facilitate personalized, competency-based learning paths and acknowledge various significant learning experiences, micro-credentials can be valuable for teachers. The demand for micro-credentials in learning is pivotal in how learners are assessed and presented. Unlike a one-size-fits-all approach, micro-credentials are tailored to meet the unique needs of individual learners. With the aid of digital tools, micro-credentials offer flexibility in terms of learning anytime and anywhere. For teachers, micro-credentials provide an opportunity to expand their knowledge and receive recognition as they progress through vocational learning. A primary reason why micro-credentials are appealing is that they break down complex teaching skills into manageable pieces. Trainees can build and demonstrate proficiency in basic skills, and then combine them to master complex ones. Teachers can select the skills or parts of a skill that will benefit them most and showcase their competence by demonstrating what they can do.

Advancements in database technologies have enabled the accumulation and management of large, intricate data from various sources and in diverse forms. Such complex data holds significance, and with analytical tools, it can be transformed into big data. To make strides in research and analysis, it is crucial to involve educators in discussions on big data, as they can contribute to projects that explore the effectiveness of pedagogical techniques and how they can improve student learning. Big data plays a pivotal role in adapting education to cater to individual learners, and it offers significant value in enabling educators to personalize learning. Figure 2 highlights the three critical stages of big data. Online learning systems collect student data, which are examined using educational data mining methods to develop predictive models that classify or relate data. These models are fundamental in shaping adaptations or interventions that promote adaptive learning systems. Two areas in education that specifically make use of big data are educational data mining and learning analysis. With the incorporation of various data sources, big data offers a wide range of analytical and predictive options, leading to better progress in education. [18, 19, 20, 21, 22, 23].

By utilizing technologies such as virtual and augmented reality, students can visually connect with their classmates and converse with them in real-time, despite being in different physical locations. This enables them to receive prompt feedback from their teachers and feel like they are in the same place as their peers. Shared virtual environments also allow for simultaneous viewing of classroom learning materials and discussions about the content. The use of virtual reality in education and training is impressive, as it provides innovative advantages to people of all ages [24, 25].

The main advantage of using virtual reality in education is that it is highly motivating. For instance, in the field of education, students can examine a molecule in detail and become familiar with its parts by modeling it in a virtual reality environment. Virtual reality also enables students to view an object from a certain distance and see the whole rather than just a part. Moreover, a virtual reality model of a neighborhood can offer a different perspective on the connections between residents, buildings, streets, and open spaces [26].

Additionally, virtual reality can foster cooperation and interaction among students. This increases their participation and engagement by providing them with immersive experiences, reducing distractions, and fostering positive attitudes when they receive feedback that helps them easily achieve their learning goals [27].

Blended learning refers to a type of education where a portion of the lesson is delivered online while the rest is taught through traditional methods. This approach allows students to learn at their own pace and to have more control over their learning experience. According to some scholars, the connection between the method and the subject matter should be taken into account in the definition of blended learning [28].

Blended learning offers many advantages for students and educators. It provides a variety of learning environments, encourages reinforcement, improves accessibility to learning materials, and fosters a sense of community through communication platforms and collaborative learning experiences. By placing the student at the center of the learning process and leveraging technology, blended learning models can create more engaging, effective, and successful learning environments [29, 30].

Blended learning encompasses various teaching and learning methods, including direct instruction, indirect instruction, collaborative teaching, and computer-assisted individualized learning [31]. The benefits of blended learning are numerous, as shown in Figure 3, and include expanding learning opportunities, supporting course management activities, providing information and resources to students, and promoting interaction and motivation through collaboration [32].

The proliferation of data hosting and processing services on the Internet has led to the emergence of a novel concept - cloud computing. This infrastructure provides computing and storage resources on demand and as a service, catering to the rising demand for such resources in various sectors, including planning and correction. Cloud computing enables users to access services and applications anytime, anywhere, and from any device, relieving them of the burden of infrastructure management [34, 35].

In the realm of e-learning, cloud computing finds its application in the form of a learning cloud - an e-learning infrastructure comprising hardware and software computing resources to support e-learning. Educational institutions, students, and businesses can rent virtual computing resources as services from a learning cloud, which serves as a future-ready e-learning platform (Figure 4) [36].

To develop gamification as an academic concept, it is necessary to determine whether the current gamification structures differ significantly from the research areas and how they relate to existing sites. Gamification involves using game design elements in non-game contexts to motivate users to participate. While most existing gamification applications focus on providing points and rewards, the concepts of game-thinking and game mechanics have been used in problem-solving before [37-39].

Gamification is now being integrated into e-learning, where it is used as a pedagogical system developed in game design but applied in a non-play context. Game mechanics such as scoring, levels, and badges are incorporated into the course or module, and this can contribute to the motivation of less motivated students and their interactions with other learners. Game-based learning, on the other hand, involves students playing games designed to enhance their learning, rather than integrating game design principles into standard classroom instruction. While the terms "game-based learning" and "gamification" are sometimes used interchangeably, they actually refer to two different pedagogical methods [40, 41].

Gamification offers new research opportunities and can be a promising approach to motivating learners and improving their learning outcomes. Figure 5 illustrates how the addition of game features to learning environments can be beneficial to both students and educators [40, 41].

Portable technological devices are now widely used and have significantly impacted users' daily lives. In the past, these devices were mainly used for social communication, and their educational usage was limited. However, the use of mobile technology for educational purposes has now become widespread and covers social and economic aspects (Figure 6) [42].

Figure 6 illustrates the three key concepts of mobile learning [42]. With the help of mobile technology, learners can decide when and where they want to learn, and everyone has the right to access learning materials and information, regardless of their location, status, or culture. Mobile learning offers students access to educational resources and materials anytime and anywhere, without having to wait for a specific time or go to a particular location. By utilizing wireless mobile technology, such as smartphones, tablets, and laptops, students can learn from wherever they can access learning materials. Mobile technology provides exciting new opportunities for educational experiences.

Mobile learning primarily focuses on the development of mobile applications and software platforms that offer digital content, including digital textbooks and access to educational resources for e-learners through mobile devices [43, 44, 45].

The concept of the Internet of Things (IoT) pertains to a network that interconnects various devices to the Internet utilizing specific protocols. These devices, through their sensing capabilities, communicate and exchange information, enabling intelligent recognition, monitoring, positioning, and management. With the emergence of IoT, the scope of Internet connections now extends beyond classical computers, encompassing other physical objects that serve different purposes. The ultimate aim of IoT is to create seamless connectivity between anything, anyone, anywhere, any network, and any service. To achieve this goal, three primary factors are involved, namely, a shared understanding between users and devices, software architects, and distributed communication networks that facilitate processing and communication of relevant contextual information, using analytical tools that enable autonomous and intelligent behavior. These three factors ensure that intelligent connections and context-sensitive calculations are realized. IoT involves the integration of wired and wireless control, communication, and information technologies, which connect numerous new technologies, subsystems, and those operating under a jointly managed and intelligently controlled platform (see Figure 7) [48–50].

To summarize, this passage discusses the use of video content in education and the impact it has on students and instructors. It highlights the benefits of online videos such as portability and the ability to work at one's own pace. The passage also mentions that video material can enhance learning by showing real-life scenarios, explaining concepts, and inspiring discussions. The pedagogical impact of video can be summarized in three concepts, which include interaction with content, engagement, and knowledge transfer and memory.

The passage delves into the utilization of video content in education and its effects on both students and instructors. It emphasizes the advantages of online videos such as their portability and the flexibility they offer in terms of pacing. Furthermore, the passage notes that video content has the potential to enhance learning by providing real-life examples, clarifying concepts, and sparking discussion. According to research, the pedagogical impact of video can be boiled down to three main concepts: engagement with the content, involvement, and retention of knowledge in future teaching contexts.

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The aim of this study was to provide insight into the current state of e-learning. Despite being a relatively new concept in the education field, e-learning has made significant progress, with many new related concepts emerging in literature. These concepts include artificial intelligence, micro credentialing, big data, virtual and augmented reality, blended learning, cloud-based e-learning, gamification, mobile learning, Internet of Things, and online video. This study explains these emerging trends in e-learning, as well as innovations that learners have contributed to e-learning environments.

Each e-learning environment has unique features that distinguish it from others, and these concepts are discussed in various research studies. However, new e-learning trends are constantly emerging, and each one supports the development of e-learning environments. For instance, blended learning combines online and classroom-based learning to provide learners with the most appropriate learning experience [56, 57], while cloud-based e-learning environments facilitate identity management, data security, and resource control [58]. These new trends will continue to shape education in the future.

Researchers interested in the field of e-learning can explore the ten new topics mentioned in this study. While theoretical studies have been prevalent thus far, there is a need for more practical research. These new trends complement each other and can be studied together. For example, gamification and virtual and augmented reality can be combined, as can artificial intelligence and micro credentialing. Collaborative work in this manner is likely to be more effective. In the future, researchers may recommend that new e-learning environments be developed for education rather than simply applying existing e-learning practices in the classroom.

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