



The culture of university e-Learning: state of the art

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Abstract ;

Today, a new form of learning has emerged. This is e-Learning, which is disrupting university education and making it more flexible and satisfying. With e-Learning, a new pedagogical era has begun, characterized by a fine line between success and failure. Some key factors determine its outcome. The quality of the content, the pedagogical approach, interactivity, but also tutoring, the training agenda, ergonomics, and the user experience and web design are key factors in the success of e-Learning and are at the heart of this research. These factors must be taken into account not only by the lecturer but also by the university staff as a whole, to ensure the success of the learning process before such a technological form is widespread.

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1. *Introduction*

Correspondence studies, formerly known as open distance learning, or Distance Learning, are now only distant cousins of e-Learning, as this non-synchronous e-Learning did not necessarily require special equipment on the part of those involved: trainers and students. It was just a matter of allowing a distant learner to receive educational content. Information and communication technologies have disrupted university education. It is no longer just a question of distance learning, but of taking part in e-Learning.

The word e-Learning began to be used in the mid-1990s and covered a multitude of acceptances. E-Learning has emerged as a revolution in the world of education and has generated popularity in terms of the number of students (Hassanzadeh et al., 2012).

The application extension of e-Learning in universities is one of the contemporary phenomena widely deployed today. Worldwide, the increasing use of such a learning model by universities reflects its undeniable success in improving the learning process valued by both the learner (student) and the lecturer. Of course, this is not always the case when satisfaction with e-Learning is perceived. In some

circumstances, this new form of e-Learning is depreciated.

The paper focuses on the key success factors of university e-Learning. These factors remain essential to ensure the satisfaction of the sender and receiver as the two main poles of e-Learning. Many of these factors contribute to a successful e-Learning experience, but three of them are essential. These are the quality of the content, the pedagogical approach, and interactivity.

Other factors are more or less important, but their importance is reflected in the direct enrichment of four key factors of e-Learning. We talk about tutoring, the training agenda, ergonomics, user experience, and web design.

2. *Quality of learning content as a key success factor in e-Learning*

The value of learning content is paramount. Students are not fooled by the technological coating. They first want an intellectual offer that has a respondent and they know how to recognize it. The substance of the learning proposal matters a great deal. Students want to be trained by the competence of the content expert (Clark and Mayer, 2016). They must feel that the designer-educator knows his business and knows how to find the right

ways to make his contribution understood (Mehtaa et al., 2019; Wu et al., 2022).

The content offered must be adapted to the level of the learner groups. The content must be comprehensive, up-to-date, and balanced in terms of extension and technicality. The jargon, the logic to be applied and the reflexes to be adopted must be considered from the beginning of the training.

There are 5 elements of the content quality assessment, as follows:

- Presentation of the competence of the content designer;
- The pedagogical logic of progress in content;
- Explanations of the linkages between the sub-objectives;
- Intermediate syntheses and summaries highlighting the importance of what has just been seen;
- A survey of students on the importance of learning provided by e-Learning.

a) Presentation of the competence of the content designer

The lecturer who designed the course should not remain a stranger. It is quickly presented to students. This is the first element of confidence that students can have in the content.

b) The pedagogical logic of progress in content

This logic is clear and explicit. A progression plan and a summary of the learning objective are provided. Emphasis is placed on its quality and its dependence on the correct design of the presentation structure. It is understandable through the clarity of the synopsis of the course that unfolds the sub-objectives and sub-sub-objectives to be covered (Chen and Tseng, 2012; Chu and Chen, 2016).

c) Explanations of the linkages between the sub-objectives

The thread of discovery of the contributions made in the content must always be recalled. This is especially true because the student may have left e-Learning and returned to it later. The pedagogue is constantly concerned with the understanding of the course he proposes. This concern is expressed in particular in the regular questioning that constantly supports the progression of the student in the training (Clark and Mayer, 2016; Mehtaa et al., 2019).

d) Intermediate syntheses and summaries highlighting the importance of what has just been seen

Each key contribution, marked by each step of the course progression, is highlighted by a commentary often referring to the applications that will result from it. The

lecturer's contributions are not free of charge. They matter. This importance is also underlined by specific interactivity linked to exercises and questions that will make the learner think (Chu and Chen, 2016).

e) A survey of students on the importance of learning provided by e-Learning

To firmly anchor the knowledge or skills brought to the student and to persuade him that he has learned interesting things, nothing beats a questionnaire asking him to rank the importance of the different concepts covered. Through this questionnaire, it is an opportunity to get his finger back on the interest and quality of what he has just learned. This requires it to reflect quickly on the substance of the proposed content (Clark and Mayer, 2016). When face-to-face training is integrated into digital training (blended learning, for example), the lecturer reviews with his students the most recent, effective, surprising concepts and ideas that have just been studied. He then makes explicit the reasons for a particular interest in a particular concept. The e-tutor will be able to put on social learning posts and videos that give concrete examples of the concepts discussed (Clark and Mayer, 2016).

3. The pedagogical approach as a key factor for the success of e-Learning

Supervision of students is essential, both in terms of professional expertise and in terms of teaching. The pedagogical approach differs from the pedagogical method adopted in e-Learning of the distance phase. The pedagogical approach concerns the arrangement of different phases of the learning process: digital courses and their access materials, e-tutoring, collective social learning, face-to-face seminar, various tests, exercises, virtual classes, remote work groups, etc.

As far as these pedagogical methods are concerned, we know that current e-Learning favors active methods: discovery method, simulation method, various games, a method using social learning and co-development, socio-constructivist method. . . , etc (Clark and Mayer, 2016).

These methods involve student activity. The pedagogical approach, on the other hand, concerns the arrangement of different phases of the learning process. Taking this pedagogical approach into account reminds us that the evaluation of e-Learning is also done with the pedagogical environment in which it is inserted.

It is always part of an educational ecosystem in which the technological system is also relevant. Designers-

pedagogues have a wide choice in the arrangement of learning phases. There are four components of the assessment of the quality of the teaching approach:

- The proper management of the pedagogical approach and the adaptability of the approach;
- The variety and distribution of phases of the proposed overall learning process;
- Consistency of the proposed approach;
- The interest and variety of computer media available for the distance course.

a) The interest and variety of computer media available for the distance course

In the age of mobile learning and fast learning, students appreciate the availability of distance learning courses on their Smartphones or tablets.

b) The variety and distribution of phases of the proposed overall learning process

The whole approach of the proposed learning process must guarantee the permanent motivation of the students in an engaging dynamic. Nothing should be too long, too spaced, or too out of place. . . Adaptation to the group of students is the keyword. The sequencing of the process is carried out with the greatest consideration

given to the cultural and cognitive characteristics of the students (Arafat et al., 2019).

c) Consistency of the proposed approach

Each phase of the proposed overall learning process comes at the right time and fits well into the progression. For example, a virtual class is closely related to the topic addressed in the previous phase (e. g. an application exercise); a face-to-face seminar is closely related to the previous digital courses; a knowledge test comes at the right time in the process .

d) The proper management of the pedagogical approach and the adaptability of the approach

There is not only an overall administration of the student group but also a general monitoring of the progress of the student group in the overall training process. A lecturer monitors the overall progress, appreciates the difficulties encountered, and can propose the necessary corrective action (Duffy and Kirkley, 2004; Evans, 2008).

4. Interactivity is a key factor for the success of e-Learning

The distance and digital part of teaching must incorporate various forms of interactivity. The student does not want to be passive and face a downward formation. Accustomed to video games and the many

tactile choices of Smartphones, he wants to participate intelligently and in a playful way, if possible, in his learning. Digital learning technologies offer us a variety of ways to introduce interactivity:

- Questions about the various parts of the proposed learning;
- Exercises and application games and their corrections;
- Serious games and their debriefing
- Follow-up of students and comments from the e-tutor;
- Lecturer's exchanges on social learning with students.

a) Questions about the various parts of the proposed learning

The author tools all offer the possibility to insert questions into the course of e-Learning. The questioning pushes the student to think and get involved. It is an important complement to the understanding of the proposed learning as it uses a variety of forms involving Bloom's various cognitive processes. The questioning, through the pedagogical comments that are made to the answers, allows the designer-educator to develop differentiated paths according to the mistakes made (Duffy and Kirkley, 2004; Arafat et al., 2019).

b) Exercises and application games and their corrections

The questions and quizzes can be doubled by small exercises, more or less playful, requesting the implementation of the concepts of the e-Learning course. It is through the answers given by the learner that interactivity takes place. Interactivity is enhanced by small animations explaining solutions or making concrete comments.

We will review how the pedagogical method used (discovery method, simulation, socio-constructivist method), also introduces interactivity by asking the student to intervene to build his learning.

c) Serious games and their debriefing

The staging, realistic or fictional, of serious games offers interactivity in the choices of actions to face the presented situations. In addition, every action taken by the student is recorded and gives rise to a notation and a pedagogical commentary (Means et al., 2013).

d) Follow-up of students and comments from the e-tutor

The current platforms allow monitoring of the activities of each student. In this way, the lecturer can question a particular student about his navigation and the results. He obtains from the questions and tests spread throughout his career (Evans, 2008; Clark and Mayer, 2016).

e) Lecturer's exchanges on social learning with students

The social learning space allows the lecturer to facilitate exchanges with students. In this space, he posts various links, videos, and other resources that may be of interest to students. He may arrange group meetings and facilitate discussions on specific topics (Duffy and Kirkley, 2004; Al-Samarraie et al., 2018; Arafat et al., 2019).

5. Tutoring as a key success factor in e-Learning

Undoubtedly, without e-tutoring for the distance phases of the pedagogical process, e-Learning remains demotivating and leads to students dropping out. The quality of tutorial follow-up in digital training is therefore important (Means et al., 2013). The functions of the e-tutor are variously grouped here into three main roles. For each of these roles, the quality of follow-up and response will need to be examined:

- Quality of the performance of the organizational role by the lecturer;
- Quality of the teaching role performed by the lecturer;
- Quality of the performance of the socio-cognitive role by the lecturer.

a) Quality of the performance of the organizational role by the lecturer

The university lecturer must welcome, guide in navigation and choice of courses

and also provide technical advice. He does it, as with all the other roles, with empathy and good humor. He is the one who reassures us and we know how to be available to mitigate any disruptive events that may occur.

b) Quality of the teaching role performed by the lecturer

This role is important. The lecturer motivates with his interventions and comments on the assessments to support the student's efforts. It ensures the pedagogical link with the student, a link that must be a warm and trusting one. He is the friendly and always positive referent who accompanies the training (Volery and Lord, 2000; Evans, 2008).

c) Quality of the performance of the socio-cognitive role by the lecturer

This is a role that takes place at the same time as the others. It makes the student understand the strengths of their learning; it uses assessments to guide the student's learning efforts; it explains and advises on the content. He is the mentor and attentive tutor of the student (Volery and Lord, 2000; Evans, 2008; Hassanzadeh et al., 2012).

6. The training agenda is a key factor for the success of e-Learning

This agenda must be adapted to business tasks. This adaptation is primarily related

to the pedagogical approach, which consists of various "phases" of learning. Each of these phases must then be divided according to a timetable that takes into account the pace of the student's professional work. Every effort must be made to ensure that students have as little time as possible to spend online training (Volery and Lord, 2000; Clark and Mayer, 2016). Mobile technology, such as Smartphones and tablets, can facilitate learning by making digital courses available anytime, anywhere (mobile learning).

7. Ergonomics, user experience, and web design as key success factors for e-Learning

The comfort and ease of navigation, as well as the efficiency of the manipulations and interactivity offered in the e-Learning courses, must be perfectly adapted to the students and the learning objectives.

The mental processes involved in learning must be adapted to the intended educational objectives but also to the intellectual abilities and mental habits of the students. The mental load required by the proposed learning should never cause stress for students (Means et al., 2013).

On the contrary, positive emotions related to discovery and play, should, if possible, be called. We know how attention and, therefore, learning are fostered by the

positive emotions associated with the staging.

In addition, the user experience qualifies the benefit and the student's experience when navigating e-Learning. Given the performance of the user and the cognitive ergonomics of e-Learning, this user experience must be maximized (Evans, 2008; Means et al., 2013).

For its part, the web design must also be of high quality. This web design depends on certain elements. To this must be added the quality of the drawings, the animations, the colors. . . , the graphics in general. All these elements must contribute to the pedagogical performance of e-Learning (Volery and Lord, 2000; Hassanzadeh et al., 2012, Clark and Mayer, 2016).

8. Conclusion

The success of e-Learning depends essentially on three major factors: the quality of the content, the pedagogical approach used, and the interactivity introduced. These three elements of student expectations are of great importance in determining the level of success or failure of e-Learning.

The two main pillars of e-Learning, i. e. the lecturer and the student, assess the benefits of e-Learning according to certain criteria related mainly to the key success factors of e-Learning on which this study is based.

Other factors thus affect the estimated depth of e-Learning. These are tutoring, training agenda, ergonomics, user experience, and web design.

Despite the indirect influence of these factors on the typical design of e-Learning, their decisive impact on the success of e-Learning is undeniable.

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