

The Deployment of E-Learning in the corporate World: Employee's Perception Analysis Evidence from Morocco

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Abstract: *Digital transformation has now become a necessity in all areas including education and training. More and more companies are rethinking their way of doing things by relying on ICT to boost their performance. Nowadays, companies are increasingly developing a learning culture within their structures in order to guarantee the required skills and qualification of their employees.*

E-learning and distance education are a new way to improve the skills development process. Distance learning has many advantages and makes it possible to meet the requirements for adaptation and development of specific and essential technological skills.

This paper aims to explore and investigate the use of learning in the company, to assess the perception of employees of this training method. Theoretically, the findings suggest a literature review for the use of e-learning in different areas, which can help with decision-making in corporate world to extend and improve the use of e-learning systems for training and skills development. In addition, This study investigates employees' perceptions of the benefits that e-learning is expected to yield.

Materials and Methods *Through this research we shed light on the perception and practice of e-learning in the Moroccan business world through an exploratory study carried out with 68 local companies. The study is conducted through a qualitative survey directed with training managers through semi-structured interviews. The data was analyzed by NVIVO and Excel.*

Results: *The vast majority of interviewees perceive the use of educational technologies positively. Nevertheless, the fact that it cannot replace face-to-face teaching is mentioned by a significant number of the participants in the study*

Key Word: *E-learning use, perception, Moroccans companies*

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I. Introduction

In light of the current critical situation, digital transformation has now become a necessity in all areas including education and training. More and more companies are rethinking their way of doing business based on ICT to boost their performance. Nowadays, companies are increasingly developing a learning culture within their structures in order to guarantee the competence and qualification levels of their employees(1).

E-learning and distance learning are a new way to improve the skills development process. Distance learning has many advantages and can meet the requirements of adaptation and development of specific and essential technological skills.

The objective of this research is to assess the use of e-learning in the company, to evaluate the employees' perceptions of this training method (2).

E-learning is an English term that means learning through different technological means, whether in national education programs, higher education programs (3), corporate training programs, or executive training programs, with the aim of improving the process of learning (4).

I.1 Defining the concept of e-learning

Several definitions of the term e-learning converge in the literature. We retain the most comprehensive one:

"...the acquisition of knowledge and skills using information and communication technologies (ICT) for the purpose of fostering learning interactions, both in terms of content, learning activities and tools, and with other users". (5)

The elearn.ca website, a joint initiative of Algonquin College, Industry Canada and SmartCapital, provides further clarification by defining e-learning as "...the use of online technologies (e-mail, websites, multimedia content, information from the Internet, and discussion or chat groups) for the purposes of learning and teaching. This includes online training, face-to-face or hybrid courses that are supported by activities and content.

I.2 The Theoretical Underpinnings of E-Learning

Over the past 100 years, learning theory has gradually become the central argument, with behaviorism developing through cognitivism to today's widespread socio-constructivism. In short, it is impossible to make an unbiased assessment of these major theories, but the following overview should describe how they can help us understand and implement today's online learning. (6)

I.2.1 Behaviorism:

Of the three main theoretical frameworks in education and e-learning theory, behaviorism is perhaps the oldest and most widely used. The most famous proponents of this method are the 20th century psychologists Ivan Pavlov, Burrhus Frederic Skinner, Edward Lee, Thorndike and John Broadus Watson. Watson coined the term. He is perhaps the most extreme of the behaviorists. He is strongly opposed to the idea that thoughts and consciousness can be used as a focal point to explain moral concepts of behavior. Essentially, behaviorism insists that certain stimuli will produce a specific response in humans or animals. The most typical example is Pavlov's dogs drooling into the bells announcing mealtime. The 'workable' version of behaviourism predicts that by fully repeating the experiment, the behaviour can be 'taught' by improving the desired behaviour with appropriate stimulation.

I.2.2 Cognitivism:

The most notable theorists in the development of cognitive methods are Jean Piaget, Jerome Bruner and Lev Vygotsky. The last two are also outstanding figures in social constructivism, but their early work is particularly important in opposing the theories of behaviorism.

Figure 1: The main learning thoughts

Authors	Assumptions
Piaget	Cognitivism is the opposite of behaviorism to some extent, as it focuses on the brain's thinking and learning process. The different aspects of the theory are largely characterized by the stage of development, either the learner is willing to accept a particular type of learning or the type of learning itself. For example, Piaget insists that children go through a cycle of maturity that determines the type of learning they can achieve.
Bruner	Bruner envisions the development of learners through a series of steps to improve learning ability. Learners must climb these steps like stairs, which means that some learning abilities depend on building other abilities at work
Kurt Lewin,	The author has developed an action research cycle of plan, implement, reflect and then modify. He describes a cycle of four stages of development: a concrete experience, reflection on the experience, abstract conceptualization from the experience and then testing the concepts in another situation.
Vygotsky	Contrary to Piagetian belief, the theorizer gives more importance to what learners have the potential to do at a given moment. The theory focuses on the gap between what the learner can do now and what is beyond their reach. That is, unless there are 'more capable people' nearby to help him or her achieve a new level of knowledge, skill or understanding. This gap is known as the zone of proximal development (ZPD). Closing this gap, or 'moving on,' is a very learner-centered process in which the learner must monitor and regulate his or her own learning activities.

I.2.3. Behaviorism

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I.2.4 Cognitivism

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I.2.5 Socio-constructivism

Social constructivist models require a third dimension of interaction between learners and their environment: Others. These others can be learners or mentors. The models developed include real-world learning environments that foster learner motivation by making learning meaningful and useful. The main elements of social constructivism can be summarized as learning in a context that is: social, reflective, authentic, scaffolded, progressive and experiential.

This shared learning style is called 'distributed cognition' by Gabriel Salomon and David Perkins (McCarthy, 2010) and they liken it to a team whose collective performance benefits from the individual learning of its members.

I.2.6. Community Constructivism

Community constructivism is a method of learning where learners can accumulate their knowledge based on their own experience and interaction with others. They have the opportunity to integrate this knowledge into a common knowledge base for the benefit of existing and new learners.

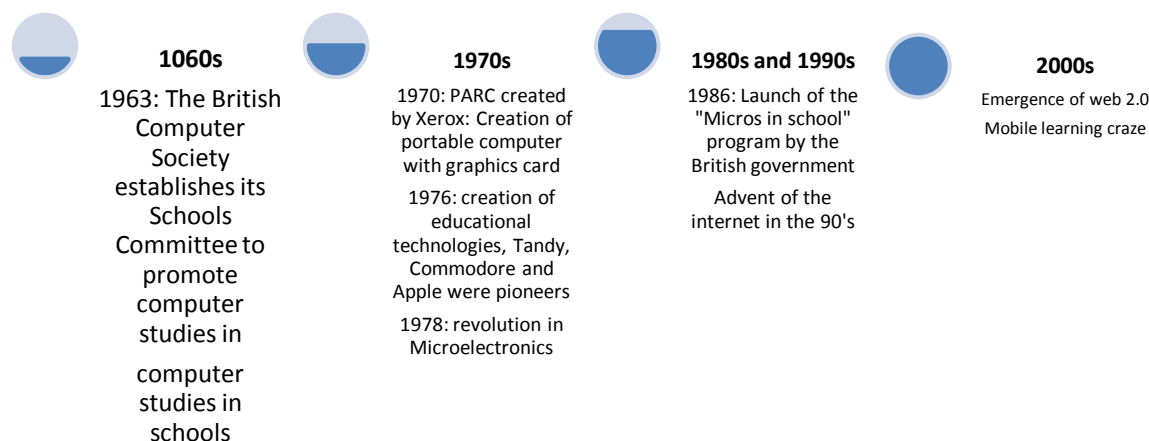
To enrich the learning environment of community constructivism, a variety of techniques must be adopted to ensure that it lives up to its purpose: learning with and for others. Pair coaching and group learning are recurrent techniques, but many other methods are also recommended, such as cognitive learning. In the face of the public constructivist approach inspired by the online learning environment, student learning will become increasingly responsive to change.

I.2.7 The Genealogy of E-learning

The history of e-learning begins with Sydney Pressey's testing machine in the 1920s. It was designed primarily for testing, but soon became relevant to teaching.(6)

Since the beginning of mechanical manufacturing on the Pressey experimental machine in the years educational technology had to wait more than 40 years before machine learning could really get started. The introduction of computers into learning was first proposed by Ralph Gerard, Dean of Irvine, California. The following continuum traces the major milestones in the history of e-learning (cf. Figure 2)

Figure 2: Continuum of e-learning evolution



(Source: on our own)

- E-Learning 2.0

E-Learning 1.0 represented a mode of learning where information was prepared and delivered to the user, as if filling an empty glass. In other words, communication was one-way. The idea of E-Learning 2.0 is to exploit and use the knowledge and experience of each learner so that everyone can benefit. This is achieved through the use of tools such as wikis, blogs and forums. These tools allow each learner to contribute their knowledge on a specific topic. Like Web 2.0, E-learning 2.0 is not about a change in technology but rather a change in the way technology is used, hence a social change (7)

I.3.E-learning in Companies: Foundations and Perceptions

E-learning is becoming increasingly important in companies (8). Thanks to its ubiquitous nature, it now provides companies with universal access to knowledge, which encourages employees to seek professional

development by adapting their skills to the requirements of the workplace(9).The contribution of e-learning is threefold:

- i. Development of skills in a short space of time ;
- ii. Deployment of the same level of quality of training programs for all sectors (especially multinationals);
- iii. Reduction of training costs (10) .

I.3.1 Advantages and Benefits

E-learning has several advantages:

- i. It is flexible as it allows the Internet user to choose when, where and at what pace they learn.
- ii. It allows the deployment and development of more precise training strategies within companies.
- iii. It is accessible and allows everyone to access information and knowledge.
- iv. It allows for the control of training costs, as these are reduced and facilitate the task of learning, especially for populations far from urban centers.
- v. It is a tool for improving technical and managerial skills for employees who are trying to improve their abilities and employability (11).

I.3.2 Impediments and Limitations

As e-learning is a developing technology, it is important to always consider its obstacles, and to implement a strategy that allows it to adapt to market constraints.

Fundamental questions to raise must therefore hold on:

- i. The organization's e-learning strategy and its impact on training.
- ii. E-learning and its relationship with technology. The latter presents two risk factors, namely Bandwidth, which must be reliable, and the choice of Learning Content Management System (LCMS) platform, which must be simple, must correspond to the type of training required and must be able to be integrated with other company functions.
- iii. Implementing the e-learning strategy in the company. This new learning experience must meet employees' expectations so that they are more committed to this type of development (12)

I.3.3 Forms of E-learning

In contrast to recent years, nowadays when we talk about e-learning courses we are referring particularly to web-based courses delivered via the Internet. Within this category, a distinction must be made between 3 types of courses:

- i. Synchronous online courses with instructor/tutor: These are courses given in video conferences or chat rooms with interactivity between teacher and students without time lag.
- ii. Asynchronous online courses without instructor/tutor: These courses do not require the presence of the instructor in real time and where teaching is done through educational software. This type of teaching is best suited for technical training.
- iii. Asynchronous online courses with instructor/tutor: These courses are planned and directed by the instructor in advance, and the instructor gives the students time to complete their assignments in groups in a virtual classroom

According to Allen and Seaman (2008), there are 4 forms of online courses:

- i. Predefined course: This is a traditional course where technological means are 100% absent.
- ii. Web-based course: This is a course that uses 1 to 29% web-based technologies for the purpose of managing content, or communicating assignments and lesson plans to students.
- iii. Hybrid or mixed course: This type combines face-to-face and online courses by 30-79% using discussion forums.
- iv. Online courses: This type involves no direct contact with students. The proportion of its content online varies between 80 and 100% (13).

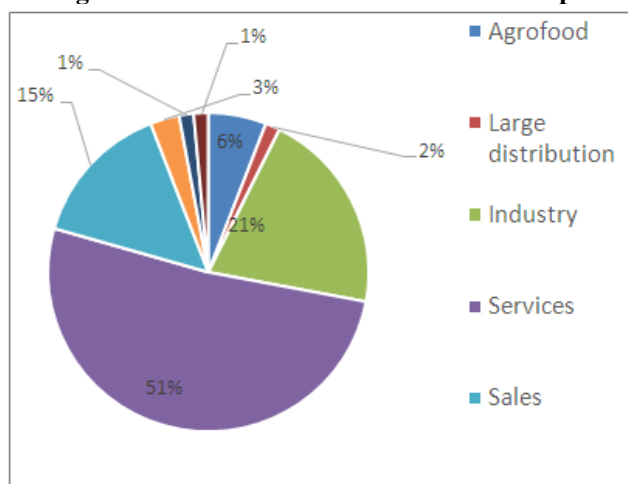
II. Material And Methods

Qualitative research was conducted using a semi-structured interview guide with 68 managers from companies operating in different sectors. The selection was made at random. The interviews had the following objectives

- i. To measure the extent of the deployment of distance learning using Information and Communication Technologies (ICTs);
- ii. To understand employees' perceptions of e-learning and its challenges;
- iii. To consider the opportunities and benefits that e-learning could bring to their work and their recommendations.

The results were analyzed in two stages: a pivot table to measure the quantifiable data (deployment of the e-learning system, experimentation with distance learning and company characteristics). The administration of the interview guide was carried out by telephone and face-to-face.

Figure 3 The sectoral distribution of the sample



The sample respects the principle of representativeness of the population as more than half of the companies are from the service sector (cf.figure3).

Procedure methodology

After having obtained the agreement of managers to participate in the survey, a rich interview guide was used to respond to respondents' perception of e-learning and to collect information on the company. The first part of the interview guide contained characteristics about the company such as the date of creation, the sector of activity and the turnover. On the second part questions on the deployment of e-learning, its use, preferences and effectiveness were asked to assess managers' perception. The interviews were conducted in French , the most used language in the corporate life in Morocco .

III. Results

Deployment of e-learning systems: Using the cross-sectional chart (cf. table 1), we have raised the extent of e-learning deployment.

Table N° 1 E-learning deployment and experimentation

Company size	Déploiement eLearning System		Experimentation eLearning		Seniority			Business sector							
	yeah	No	yeah	No	Less than 1à years	Less than 50 years	More than 50 years	Services	Industry	Agrofood	sales	Lage distribution	Public service	Real Estate	Construction & Civil engineering
Micro businesses	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0
Medium Businesses	10	15	19	6	9	10	6	11	4	3	5	0	0	1	1
Large companies	27	15	36	6	7	12	23	23	10	1	5	1	2	0	0
Total	37	31	56	12	17	22	29	35	14	4	10	1	2	1	1

The table shows that 55% of the total sampled respondents interviewed (N=68) declared having an e-learning system. We can deduce therefore, the characteristics of the companies that have implemented an e-learning system from the following elements (cf. Table1);

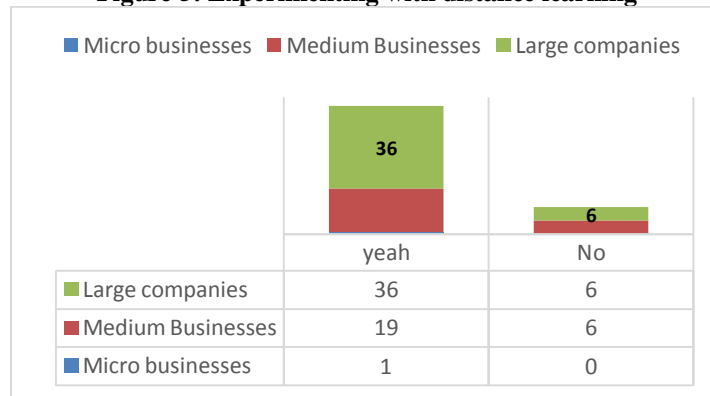
- iii. 73% are large companies, 65% of which operate in the services sector;
- iv. The majority (43 %) are large companies with more than 50 years of seniority (cf figure 4) ;

Figure 4 E-learning deployment by seniority



v. As for the experimentation of distance learning (cf. figure 5), we can say that the majority of respondents from companies of all sizes declare having already benefited from a distance learning program, which sets it as high as 82% of the total sampled respondents.

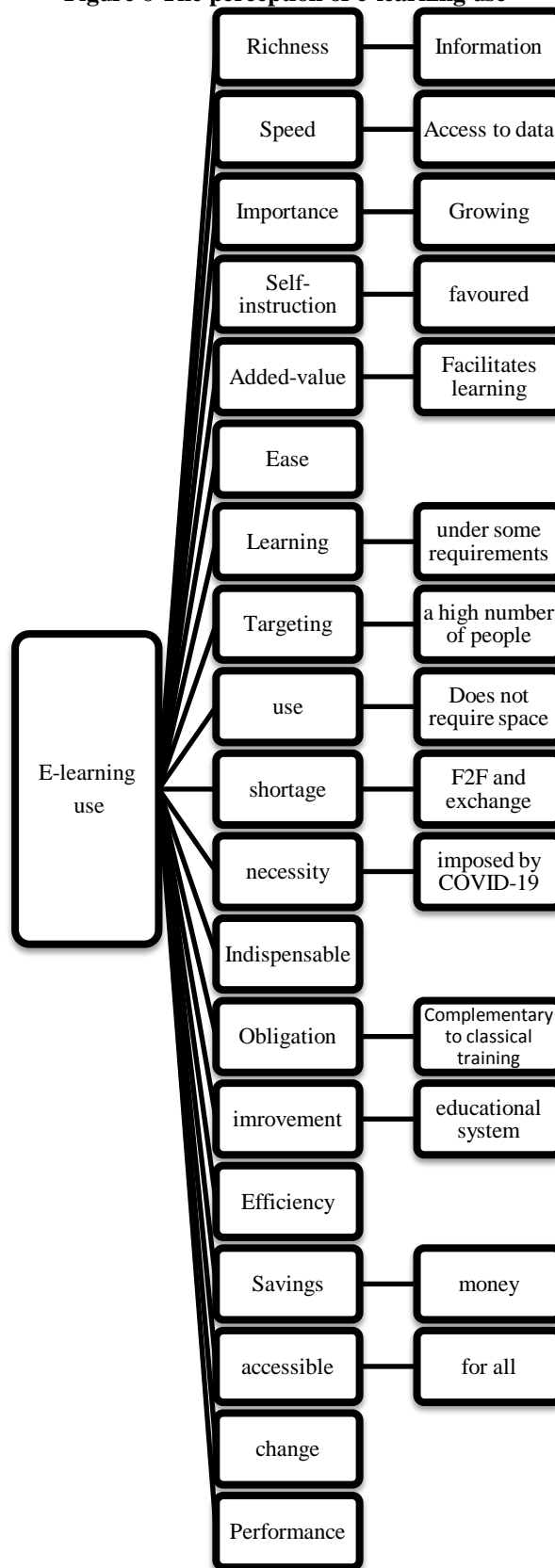
Figure 5: Experimenting with distance learning



The word cloud (Cf. appendices 1) made shows that e-learning is now very common and well known. It's perceived like a tool of knowledge transfer using internet and ICT tools.

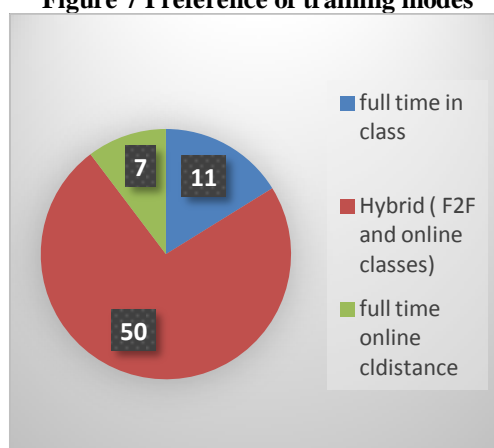
Thanks to the tree of words displayed by a vertical analysis of responds we can confirm that the vast majority of interviewees perceived the use of educational technologies positively. Nevertheless, the fact that it cannot replace face-to-face teaching is mentioned by a significant number of the participants in the study. We can conclude from the synthesis of the horizontal study that the use of educational technologies is beneficial and complementary to the face-to-face mode. (cf. figure 6 Words Tree). On the other hand, e-learning is perceived as a tool for the 'democratization of knowledge'

Figure 6 The perception of e-learning use



- i. Acceptance of fully distance learning remains low compared to the hybrid mode favored by our respondents. This confirms the resistance to change observed among 16% of the respondents (figure 7)

Figure 7 Preference of training modes



- ii. Advantages/disadvantages of e-learning: The most cited advantages are consistent with the literature review in terms of cost reduction and autonomy in training and enrichment by respecting the learner's pace. The lack of interaction is often cited as one of the main limitations of e-learning, alongside technical problems such as internet speed and lack of technological equipment.

Research Limitations

The study was conducted with 68 executives, mainly from the public sector. As a result, the field of investigation was limited and does not allow for the results to be generalized over a wide spectrum

IV. Conclusion

The study was carried out during the covid 19 health crisis, when confinement and teleworking greatly favoured the use of e-learning in the workplace. This explains why the results of the survey are interesting as almost all respondents have experienced distance learning. In order to make the most of the integration of information and communication technologies and other innovative devices in the transfer of skills and knowledge at a distance:

- i. Have a simple and adequate technological infrastructure (equipment, speed, etc.);
- ii. Favouring the hybrid training mode according to the predominant preference in the responses;
- iii. Provide support for employees during e-learning courses to avoid the feeling of isolation raised by the survey. This tends towards the development of e-learning 2.0 and collaborative learning
- iv. E-learning itself is an innovation and requires the prior removal of resistance and reluctance to it, and it is necessary to destroy the stereotypes associated with ICT and digital technology in order to promote its use in the professional world.

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Appendices 1 word cloud for of e-learning definition



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