



Dossier: "The virtual environment student"

Construction of a valid online training model from the point of view of the student as part of their study discipline

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Abstract

Since the virtual training modality first came into being, there has been a growing interest in identifying the factors that determine the success of an online training system. Technological, economic and pedagogical approaches have provided information about what, from each field, has been considered to be the key factors of success.

However, and as this new training modality becomes established, it is essential to know the student's opinion with regard to what, from the user's point of view, is considered to be efficient or valid and determinant of the success of a virtual teaching-learning system. If the virtual student becomes the protagonist in the learning process, acting according to operating guidelines based on maturity and autonomy (Bautista *et al.*, p. 34), shouldn't they also take part in designing the teaching system?

Without losing sight of each training experience being conditioned by a series of factors that determine the structure of what would be a specific virtual training model, we meet as many types of models as specific needs of each student. However, these models will necessarily have to share a series of common elements that will make up the framework of a virtual teaching-learning system, on which will have to be added the didactic and technological element in the exact measure so that they provide the student with exactly what they ask for.

Keywords

student, user, expectations, design, didactic, technological.

Resum

Des que la modalitat formativa virtual va començar, hi ha hagut un interès creixent a identificar els factors que determinen l'èxit d'un sistema formatiu en línia. Plantejaments tecnològics, econòmics i pedagògics han proporcionat informació sobre el que, des de cada àmbit, s'ha considerat factors clau de l'èxit.

Tanmateix, i a mesura que aquesta nova modalitat formativa es va assentant, resulta imprescindible conèixer l'opinió de l'estudiant sobre el que, des del punt de vista de l'usuari, es considera eficaç o vàlid i determinant de l'èxit d'un sistema virtual d'ensenyament-aprenentatge. Si l'estudiant virtual pren el protagonisme en el procés d'aprenentatge, actuant d'acord amb



pautes de funcionament basades en la maduresa i l'autonomia (Bautista *et al.*, pàg. 34), no hauria d'intervenir també en el disseny del sistema d'ensenyament?

Sense perdre de vista que cada experiència formativa és condicionada per una sèrie de factors que determinen l'estructura del que seria un model formatiu virtual concret, ens trobem amb tants tipus de models com necessitats específiques de cada estudiant. No obstant això, els esmentats models hauran de compartir necessàriament una sèrie d'elements comuns que vindrien a formar la bastida d'un sistema virtual d'ensenyament-aprenentatge, sobre el qual caldrà afegir l'element didàctic i tecnològic en la mesura exacta en què proporcionen a l'estudiant exactament el que sol·licita.

Paraules clau

estudiant, usuari, expectatives, disseny, didàctic, tecnològic

Introduction

To speak of the factors that determine the success of an e-learning system, we have, to date, the opinions offered in this respect by educationalists, designers, programmers and providers of this new type of training; judgments that, on numerous occasions, have proven to be divergent.

Besides this, we have the data provided by the students themselves in relation to the present training offer. This information has been gathered from the e-learning platforms through measuring systems that are providing us with quantitative evaluations with regard to some of the most relevant aspects of their training experience in a virtual system: degree of use of the classroom services, level of satisfaction in terms of the tasks carried out by the counsellors, up to what point they have considered the content to be useful, duration of connection times, etc.

However, it is here where the difficulty arises when trusting whether these quantitative evaluations really do permit us to evaluate the efficiency of an e-learning system; in other words, if the student has actually acquired the skills that were intended to be developed at the start of the course. Let us imagine an online course in Human Resource management; for the student to state that they agree with the content, does this mean that, once it is completed, they will be able to tackle a union dispute in their company efficiently, or to choose the best candidate in a selection process?

And in terms of the learning assessment and self-assessment systems, are we sure that merely passing a battery of tests on an online course in Negotiation Techniques, for example, guarantees that the student is capable of negotiating effectively? What design should an online course of these characteristics have to ensure the development of this type of skill? Is the same model valid for any type of discipline or subject? And, finally, what and who should determine its validity?

We will try to answer these questions demarcating the system design framework to the student's circumstances and learning aims; in other words, from the student's point of view. The reason is not simply that a utilitarian vision—centred on who “uses” the system—would complete the panel of experts, who, from education, technology and economics, have theorised on the

bases of a virtual training model; it is that, also, we cannot lose sight of the current that postulates the ergonomic adaptation of any system or design to the characteristics of the user. In fact, if industry invests in anatomical and psychological studies into the consumer, why, in this case, should we forgo also solving the problems of mutual adaptation between man and machine, between the student and the system?

But this would mean adopting the student's vision and determining from this the technological, social and educational aspects that impact on the success of an online training experience insofar as they can, or not, guarantee them the type of learning that the academic institutions, conditioned at a higher level by the requirements of the job market—at public and private level—require them to reach.

We are, therefore, initially facing the question relating to the factors on which an e-learning system is supported from the above two spheres: the academic and the student. Once identified, the effects of the inter-relation between them will be analysed; as we will see later, this will highlight the existence of several types of training needs, each of which will lay the bases for the design of their corresponding models, understanding as such the layout of what an online course should be. The aspects common to all the resulting models will determine the success of a virtual training experience from the student's point of view.

1. Identification of the parameters which determine the feasibility of an online training model

In line with the above, an analysis of the model from the point of view of the user may provide the foundations for an efficient design. It is true to say that any evaluation from the point of view of the person designing it will be useful in that it will enable us to demarcate the field of possibilities of the model. For example, a technologist will provide us with data as to the exact measure in which we can equip the model with technological components, although application of this measure does not in itself assure us that it will exactly meet the student's needs, nor that it will be



the determining factor which means that the student does in fact learn.

For this reason, we need to identify the parameters upon which the student evaluates the efficiency of their training on virtual platforms. To cite another example: let us imagine that a person needs to study a completely theoretical subject as they will be taking an examination in it and passing it will lead to securing a job. In today's world, technological possibilities offer us the opportunity to design an interactive course using a wealth of audiovisual effects; however, by contrast, we find that what the student needs is to learn the subject by heart; it is for this reason that they ask nothing more than a complete content, even in pdf format, the help of a counsellor and a series of study tips and recommendations, all online. There will be some who question the fact that this model is set within the online training system, precisely because they find its structure too simple and linear. Yet, however, in this particular case, the student will prefer it to any other as this specific system is the one that adapts perfectly to what they need and the one that they find the easiest to use to take an examination well; in my opinion, this should suffice to certify the feasibility of the model.

However, to meet the needs of the student, we must first identify the factors that configure and determine an online training system. These factors are obtained from the analysis of what has conditioned the education system expanded to the technological potential of the moment and what makes it possible. These are factors which, in addition, will have a different weighting when it comes to the configuration of the corresponding model, as we will see below.

Determining factors of an online training system:

- The *educational context* in which the student is situated:
 - a. Regulated education (school/university graduate or postgraduate).
 - b. Unregulated education (skills: work integration / work retraining).
- *Their aims*, i.e., what they want to achieve: learn/train/retrain.
- *Their environment* in terms of technological infrastructures: access to terminals/high speed lines/costs.
- The *situation* from where they will be approaching their learning process: school or work.

By interrelating these four factors, we will be able to identify specific training experiences, such as the ones we mentioned above: each one of these will require a definite training model on the basis of the type of learning that the student needs to develop (Vicent, 2007).

To illustrate this, we will take the first two parameters (educational context and aims), with their respective variables, to obtain the corresponding training model. We will also add the profile according to the type of student that would be included in each model.

We will also see that the same student profiles may lead to different training profiles due to the pressure exerted by the "aims" on the configuration of the model; therefore, they will be taken to be the preponderant aspect of a model that works and is useful.

Model 1

CONTEXT: regulated education → school level

Aim: to learn, in the sense of acquiring basic and general, cultural and social knowledge about the environment in which students live.

STUDENT PROFILE: academically, psychologically and socially in development. Medium or low level of multimedia literacy. Dependent on a training context previously defined and approved by the academic authorities.

The LEARNING TYPE leads to a GUIDED training model.

Model 2

CONTEXT: regulated education → university level

AIM: to learn, in the sense of acquiring specific knowledge that refers to one very specific discipline.

STUDENT PROFILE: developed social and psychological maturity. Medium and high level of multimedia literacy. Relatively dependent on a previously defined content, although a margin of freedom is allowed when accessing knowledge through research.

The LEARNING TYPE leads to a SEMI-DIRECTED training model.

Model 3

This covers the following two aims.

CONTEXT: unregulated education → work integration level
→ aim A → aim B

AIM A:

Mastery of specific skills or abilities that are closely related to the carrying out of a certain activity which, initially, is unknown.

STUDENT PROFILE: developed social and psychological maturity. An undetermined level of multimedia literacy and one which may vary between "none" and "high", depending on other parameters, such as the "environment" and the level of access to the new technologies that has been provided to them.

LEARNING TYPE A leads to a GUIDED training model.



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AIM B:

To perfect the skills and abilities related to the carrying out of an activity that is already known.

STUDENT PROFILE: the same as in the previous case of this template.

LEARNING TYPE B leads to a SEMI-DIRECTED training model.

The important point is that, since it is a new teaching-learning model, the online training model presents a valid pedagogical approach, in terms of utility, from the very first moment; this is what it will offer the student, and depending on the conditioning factors presented previously, the confidence needed to trust in its utility and through that alternative opt for traditional teaching systems. For example, a PhD student will not have their expectations met on a rigid online training programme that does not meet their research needs, thesis approach and confirm their hypothesis. And, in contrast, a student who wants to secure a post in the public administration will feel lost, and consequently frustrated, when faced with systems that are too open and flexible that do not offer orientation or guidance in the process of assimilation of the contents of a subject.

Therefore, rather than a single virtual training model, in my opinion, what we find is that we currently have as many models as learning needs that can be detected and met through technological platforms. The important aspect, therefore, will be to determine which model meets the needs of our student and to apply it.

2. Identification of the elements common to all of the virtual training models

Generally speaking, we agree that virtual training encompasses all of the distance training actions that are supported on the new information technologies. However, within this rather generic definition, we should, nowadays, be considering the coexistence of different training alternatives:

- Courses that are followed through distribution lists, where the material is delivered in Word or pdf format as a file attached to mails sent by the teacher, who, as well as tutor, acts as moderator of the list, which is, in reality, a forum.
- Courses integrated in virtual platforms with scant or no level of interactivity between the student and the system, material in pdf format and reactive support (i.e. in response to the student's request) and communication (tutorials and forums) services.
- Courses integrated in virtual platforms with a high level of interactivity, equipped with proactive support and communication services (tutorials, forums and e-mail),

documentation (library), created with computer languages and with animation effects, videos and sound.

From this diversity, the following question emerges: which of them is valid? From the consideration of the student, the answer would be: all of them, insofar as they satisfy their expectations in the specific field within which they aspire to learning and the development of skills.

Starting from this base, the question, then, is to identify the aspects common to all of them, turning them into parameters that, from my point of view and from experience at the Adams Study Centre (Madrid), could be determinant of the success of an online training experience.

What common aspects are detected in the three types of training set out?

FIRST: the trainer. The experience that we accumulate in e-learning environments confirms that the work of the teacher, in this new context, is of capital importance in the teaching-learning process. However, the term *work* may be too broad a concept, so it would perhaps be appropriate to refer to *competences* and *functions*, and so be able to determine in what specific sense the figure of the teacher has been necessarily altered as a consequence of their participation in technological environments.

Certainly, the teacher has been and will continue to be the agent who facilitates and fosters learning. Their competences, in this sense, would not have changed. However, a technological environment obliges functional changes, specifically related to: the pedagogical approach, the styles of communication, the organisational aspects and the teaching techniques. It would perhaps be correct to state that the teacher has gone from transmitting knowledge to facilitating it, with which all of this means more than the mere transfer of knowledge; and it would be here, precisely, where the virtual teacher of the twenty-first century faces the challenge of developing new skills in the framework not just of knowledge but also of knowing how to behave and knowing how to be.

SECOND: the content. I consider it an error to state that learning content is immutable, and therefore valid, in any system: face-to-face, distance or online. Study material with the face-to-face support of a teacher can, and should, be organised schematically so that the student is capable of assimilating its structure as the teacher interprets it and completes it with their explanations. Distance study material should surpass it in solidity, but without renouncing a logical structure that facilitates its assimilation, and, of course, it should be 100% self-instructive. Finally, online study material should be, above all, flexible; a concept that, although it appears to say little, embraces a lot. One liable to changes or variations according to circumstances



or needs is flexible. Flexible material should, therefore, have a sufficiently complete structure to permit learning independently of the quantity of information and data that is added to it. The basis of the content should in itself ensure knowledge and, based on this, adapt to the different digital formats, which will be determined by the student's profile and by the expectations relating to the level of learning that they need.

THIRD: the communication systems. In virtual training, the area of communications is usually considered to be one of those of greatest relevance; as a tool it could even be classed as determinant in achieving the learning aims (Borges *et al.*, 2007). It is true to say, however, that in closed training programmes—considering as such those whose study material is characterised by the rigidity of contents with minimum or no levels of interaction—the communication systems do not have so much impact in terms of the acquisition of competences; they do, by contrast, with regard to the levels of efficiency of the student's study process, and which similarly depends on other variables, such as motivation and consistency. At the Adams Study Centre, and from experience in training people taking entrance exams through our virtual campus, we have seen that in training people for public administration bodies with a significant record of students, the greatest levels of access are registered in such services as mail, tutorials, forums and the information service¹; all of them minimise the pernicious effects that the uncertainty characteristic of selection processes to obtain a position as a civil servant, fundamentally with reference to examination dates, may create in the student. The fact of feeling part of an educational community, in this case, contributes to reinforcing in the student the levels of effort and commitment to the study subject.

3. An example of the feasibility of an online training model

Generally speaking, an online model may be feasible due to the following reasons:

A. Due to its business potential, if there is a critical mass of users who demand it, irrespective of whether the model will truly meet their learning expectations.

B. Due to its level of efficiency, whether it allows the student to achieve their learning aims, irrespective of technological and innovative aspects, without significant contributions to their study process.

To date, and for pedagogical reasons, we have insisted on the importance of this second criterion, although we will now explain the economic reasons: an online training model that allows the student to really achieve their aims will make the latter a prescriber of the former, which will attract demand due to the effect known in marketing circles as "mouth-to-mouth". This is why we should adapt the design to the specific needs of the student, even in cases where we should reject a high level of interactivity or the exhibition of multimedia effects, which, although they may initially attract the student's attention, will end up engulfing them in frustration, driving them to swell the drop-out rates.

The problem arises when we come to evaluate the model from the pedagogical point of view, because, if efficiency is based on achieving learning aims, how can we be sure that they have been reached. At school level, it will be through the results obtained from assessment tests; if these enable students to progress within the education cycle, the model will be considered efficient. At university graduate and postgraduate level, the efficiency of their online training model is more difficult to measure, as obtaining a degree is not an aim in itself, but a means of securing a job, and learning the subject by taking an online course, although it increases the possibility of obtaining it, does not guarantee it. The same occurs at work integration and retraining levels, where mastery achieved through the virtual model brings the student closer to their desired post, although it does not afford them security; this is the case in every work environment, except in the public administration. Given the characteristics of the entry system to the administration, we will take it as an example to illustrate how the efficiency of an online training model can be measured from the point of view of the student.²

What online training model would be considered valid in this situation?

Logically, and starting from the basis that none of the models currently in existence can ensure 100% success, the one that provides the aspirant with the best preparation possible and with

1. In the virtual classroom of the Auxiliary Staff of the State Administration, as in the other classrooms, the levels of access to the various services that the Campus possesses have been registered. The most notable percentages are: mail (18.85%), tutorials (10.90%), the information service (10.08%) and the forum (9.03%).
2. Entry to the public administration is subject to passing a series of tests that consist of correctly answering specific questions on a previously determined subject. The number of people who pass the test may be greater than the places on offer, which means that only successful candidates with the top grades may enter. Therefore, it is not just a question of passing, but of obtaining the top grade. To do this, and given the characteristics of the examinations, the candidate must make an effort to learn practically by heart the subject being examined. In some cases, this type of test is followed by a merit evaluation, but always with the condition of having passed the different exercises.



Scheme Of The Training Model Of The Adams Study Centre For Preparation For Entrance Exams

CONTEXT	Regulated training → work integration level	Student, with developed social and psychological maturity. Medium or high level of multimedia literacy. Dependent on previously defined closed content to which it must be confined.
AIM	To learn the subject covered by the test	
ENVIRONMENT	With Internet access	
SITUATION	Employment	

the characteristics of the selection process and to the type of study that has to be done.

In short, we can conclude that, recognising the existence of other equally efficient models in the framework of its educational speciality, we carry on applying what continues to satisfy the expectations of our students. In our case, the results that they obtain confirm this, as does the idea that, insofar as we adopt their point of view, we will be more efficient when it comes to designing an online training system that is valid—and not just innovative—as a learning method.

TYPE OF LEARNING → GUIDED				
TRAINER Functions	CONTENT	COMMUNICATION SYSTEMS	METHODOLOGY	
			Learning strategies	Teaching strategies
Trainer Guide Tutor Animator Motivator	Complete Linear Reactive Simulation exercises Information service Legislative updates	To reinforce the study process Motivation tool Information tool	Repetitive techniques	Memorisation techniques Guided techniques

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advantages in relation to the other candidates for the posts on offer will be the valid one.

Since 2001, the Adams Study Centre has applied a training model that has facilitated the access of hundreds of people to the public administration as career civil servants. The scheme that it follows attempts to reconstruct the model that has been applied in virtual training since this experience began; it is created on the demarcation of a very precise context, on the clear definition of the aim and, fundamentally, on the basis of the in-depth knowledge of the student's profile after fifty years of training people taking entrance exams under the face-to-face methodology.

In short, it is a model that meets, in our experience, what the student needs to tackle a selection system whose mechanisms have not changed over the years. To this effect, and in the framework of the specifications of the type of training that we provide, we consider it to be valid insofar as it meets the needs of the profile of someone taking an entrance exam. As can be deduced from the scheme, it is a model that does not demand of the student high levels of multimedia literacy and which bases its efficacy on the student support services³, perfectly adapted to their needs,

3. Such is the case of the system of simulations, the study guidance manual, the communication and information tools and the system of legislative updates.



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