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The Establishment of a Distance Training Device within the Regional Center of the Taza Education and Training: Administrative Cycle Case**

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ABSTRACT

The application of new information and communication technologies (NICT) in the field of training led to the creation of this new reality called distance learning. Described as the marriage of multimedia (sound, image, text) and the internet (online distribution, interactivity) DT has no doubt allowed to revive pedagogies to a new digital without or less presence. Our purpose is to verify the impact of open distance learning on the development of socio-professional skills among future administrators of the ministry of national education in initial training. In addition, the instrumentation of these training devices also provides a framework for evaluating, monitoring and controlling the training process, using the resources of computers and the Internet. Our research context takes place at the level of TAZA regional center of trades education and training (CRMEF) during the academic year 2016-2017, the use of technological tools by trainers or trainees is quite common in courses, parallel activities, self-training, communication trainers-trainees or trainee-counselors but all these forms suffer from the absence of a general frame of reference and a regulation which guides the training actions via these tools. Indeed, the recommended methodology based on engineering training devices and skills in a virtual environment i.e. "the technical instrumentation" and "educational scripting" objects and training content. During its creation as its implementation our platform experienced several difficulties including technical. Or today seeing the results of the questionnaires and following the feedbacks of trainee administrators we can judge that our goal is achieved. We thus confirm that the DT combines several advantages of personalization and multiplication and presents only a few disadvantages on the one hand, while on the other hand represents a strong change in the work habits of users and trainers.

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1 Introduction

The introduction of information and communication technologies in the field of education and

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training is a powerful vehicle for improving the quality of school learning. The openness, the liberalization of the media sector and the reduction of the costs of consumption of Internet flows have facilitated the appropriation of tools and technological means as a didactic and pedagogical support.

The use of ICT in teacher training in particular has also become an institutional obligation (national education and training charter 1999).

This new educational policy has put the leaders of the education and training sector before the opportunity and the challenge of exploiting this mode of learning within the curriculum of professional training of future teachers and administrators of the public service. Upstream, the strategic objective is to think of an alternative to learning remote in an instantaneous, collaborative and self-managed way to fight the problem of dropping out and massification.

It is interesting to note that no one can deny the contribution of technology to learning but misuse and lack of orientation can either transform it into a conditioned learning process or make the situations of success of the moments of learning, failure. Our research context takes place at the TAZA regional center for education and training, the use of technological tools by trainers or trainees is quite common in courses, parallel activities, self-training, communication between trainers and trainees, but all these forms suffer from the absence of a general reference framework and a regulation that guides training actions through these tools. Regulatory reform is governed by Decree 2-11-672 of 23 December 2011, which highlighted the restructuring of the former CPRs under the current name of the RCET. This action has put the trainers before new challenges and opportunities of a real vocational training alternating, using new information and communication technologies as a means and end of learning. Our problematic supports the idea that the use of E-learning constitutes a powerful vector for the development of the knowledge and the socio-professional skills of the future teaching and pedagogical administrators of the RCET. In addition, the instrumentation of these training systems also provides a framework for evaluating, monitoring and steering the distance learning process, using the resources of computers and the Internet [1].

2 Reference and Conceptual Framework

The framework of our study is part of a systemic approach identical to that of “systems analysis”, which is part of a functional paradigm, which Jacques Wallet (2010) [2] “the PADI square: Pedagogy-Actors-Device (media, technology, program)-institution”. The conceptual model is therefore based on the theoretical

foundations of the general framework of research in the computing environments for human learning EIAH presented by Derycke 2002, Tchounikine, Baker *et al.*, 2004 [3].

The research work consisted in carrying out a state of art of the standards of the formalization and the scripting of this virtual environment for the distance training of the future teachers of EPS.

The four foundations of the theoretical foundations revolve around the theories of information and systems. The second framework deals with the engineering of training devices and skills seeking to design and implement a platform for socio-professional learning. The third foundation accomplishes by highlighting the corpus of scripting of the objects and the pedagogical and didactic activities personalized according to the course of professional and personal training. The fourth field makes a major reference to managerial principles (monitoring, steering and evaluation), organizational activities of the community of actors involved (pedagogical community-tutor-adult learner and administrator) and the nature of the recommended modes of learning (synchronous or asynchronous).

Our meta-model is then to harmoniously articulate the models and principles of efficiencies of different scientific fields in order to standardize the design and development of the computerized learning system.

3 Research Methodology

The methodological approach focuses on the use of the components of an information system. It allows the design, development and reuse of computer artifacts in the pedagogical practices of vocational training for future EPS teachers. The electronic educational system designed for online collaborative supervision agence Wallonne des tcommunications 2008 [4], which exploits three models of technical-pedagogical formalization of the virtual environment: the LD model (learning design) of the consortium IMS (instructional management systems), the UML (unified modeling language) modeling language and the models of educational scenarios of artificial intelligence.

This methodological approach emphasizes the efficient harmonization of the different processes involved:

- Technical instrumentation
- Scenarios of the andragogic, pedagogical and didactic activities
- The managerial and organizational processes of actors and training activities

The technical-pedagogical design of the scripting, digitization and initialization of the modules of initial formation can be described as iterative, incremental and collaborative. We choose to advocate an andragogical engineering approach in the virtual environment, which has led us to highlight the design (or pedagogi-

cal design) of the sequences, the training modules and the pedagogical scenarios constituting the training proper.

The initial positioning test makes it possible to personalize the learning activities with the collective and individual needs of adult learners (Jacques Perriault 2003) [5]. The conceptualized platform meets not only the educational criteria, but also the technical and legal requirements.

A. Instrumentation and instrumentalization approaches and methods of the platform

Our E-learning platform contains the following components according to [6]:

- Course management areas (course lists, student group administration, course syllabus, prerequisites, etc.)
- Simple teaching materials (files)
- Quiz for self-assessment
- Pedagogical sequences: organization of sequences (in XML or HTML format) and quizzes/tests generated by JavaScript or by importing packages to standards
- Asynchronous communication: email, forums, etc.
- Synchronous communication: chat, white-board, videoconference, etc.
- Tools for students: personal page, self-assessment tools, annotation and favorite tools, evolution and performance reports, collaborative tools, etc.
- Tools for student management: tracking progress, online scoring.

B. The sampling population

The sample of our research is a TAZA RCET promotion of 250 trainee professors who are heterogeneous from point of view knowledge, profile, specialty or experience. We present the characteristics in Table 1.

Table 1. Population Specialt

Table of specialties of the population		
Specialty	Number	Percentage
Literary	162	65%
Scientist	20	22%
Computing	54	8%
Athletic	14	5%

C. Results

Our platform is an integral part of the center's website; we present figures summarizing the procedure.

The data taken from the table are shown in the following graph Beginning with the number of enrolles or

Table 2. Ages of members of the population

Table of Ages of the Population		
Interval	Number	Percentage
From 23 to 28 years old	151	61%
From 29 to 32 years old	73	19%
From 33 to 37 years old	20	8%
From 38 to 45 years old	6	2%

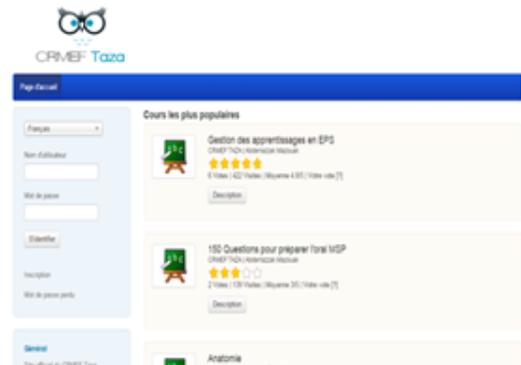


Figure 1. The platform home page: how to register

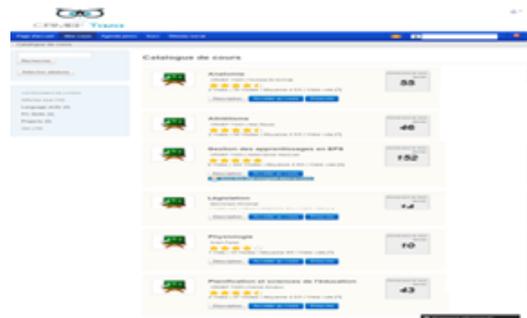


Figure 2. Learning platform page-learning list

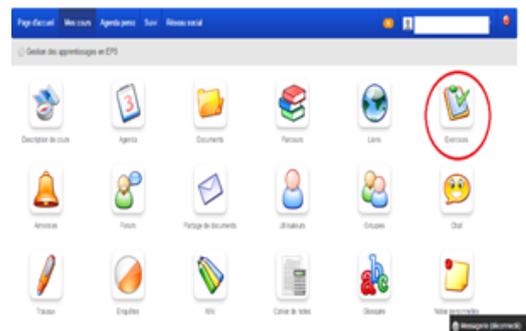


Figure 3. Exercise options

the passage to 594 enrolled allowed reaching the 100% trainee teachers of all Morocco. Thus, we can judge this percentage by the interest, the need and the supply provided by the content of the platform. The qual-

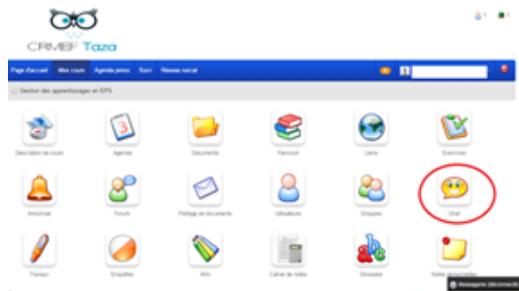


Figure 4. Chat options

Table 3. Evolution of the number of registrants on the e-learning platform

Dated	Table of the Evolution of number of registered on the platform				
	02/03/2015	30/03/2015	05/04/2015	25/04/2015	01/05/2015
Number of members	25	89	223	322	412
Educational action	Opening of the platform	Launching of the course	Launching of the All modules	Launch of MCQs and topics	Launch of written exam templates

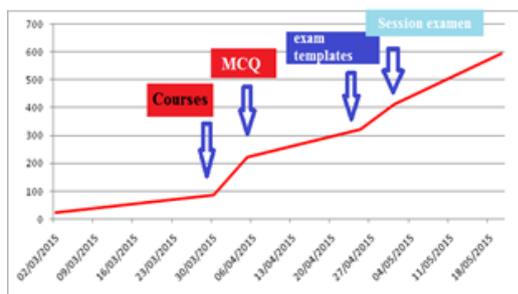


Figure 5. Teaching actions provoking changes in enrollment

ity of the program and the modalities of summative evaluation, which orient the issues of learning and evaluation towards the functions of motivation, meaning and training, going beyond the long-dominant certification aspects (self-determination and self-efficacy).

3.1 The Evolution of Connected Users in Relation to the Periods of the Day

The results presented in Table 4 represent a period from 01 May 2015 to 10 May 2015 in which the total number of registrants was 412. We note that the pe-

Table 4. Evolution of enrollment on E-learning platform

Timetable	Table of the evolution of the number of connected with the periods of the day				
	8 to 12	12 to 18	18 to 22	22 to 02	02 to 08
Total registered users	12	14	103	231	14
Percentage of logged-in users	3%	3.5%	25%	78%	3.5%

riod loved to consult the platform for the registrants is from 22h to 02 in the morning.

The following diagram illustrates this data. The number of connections compared to the periods of the day shows that the majority of trainee teachers enter between 22 to 02. With a percentage of 78%, this reality

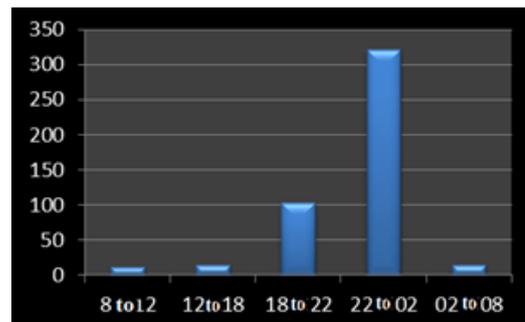


Figure 6. Diagram of the evolution of the number of the connected with respect to the periods of the day

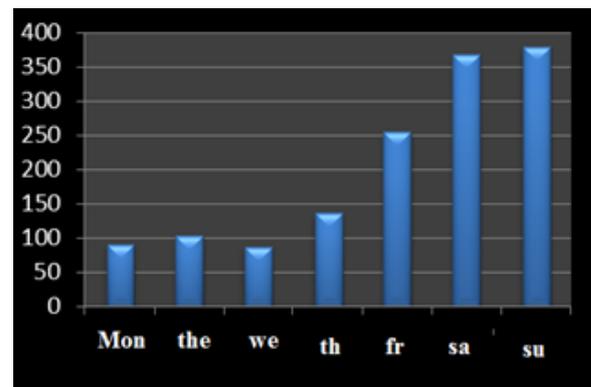


Figure 7. Diagram of the evolution of the number of the connected in the week

can be justified by the availability of browsers at this time given the workloads and training schedules of 8 to 12 and 14 to 16, which justifies the very low rate of connection during this time. Compared to the days of

Table 5. Presentation of the results of the number of connections in the week

Days	Table of the evolution of the number of connected with the periods of the week						
	Mo	Tu	We	Th	Fr	Sa	Su
Total registered users	91	103	87	136	255	367	379
Percentage of logged-in users	22%	25%	21%	33%	62%	89%	95%

the week, 89% of the connections on our platform on Saturday and 92% on Sunday during a period of which the registrants were 412 shows without any doubt that the availability of the student is a key factor in the success of the training at a distance.

3.2 Presentation of the Results of the Technical Operation of the Platform

The evaluation of the technical indicator of our E-learning platform went through a questionnaire, the results of which are summarized in the table below.

Table 6. Learning platform operations

Appreciation	E-learning Platform Operation Table		
	Yes	No	Without opinion
Connection without problem	88%	12%	0%
Difficulty with instructions for use	18%	75%	7%
	Return and Orientation Links		
	25%	56%	19%
Difficulty with the interface of the platform	Compatibility		

The analysis of the results obtained showed that our platform still suffers (12%) from technical problems of use namely the problem of compatibility especially with tablets and smartphones. Given the initial work done on the local, in addition some browsers (18%) found difficulties in using the platform of point of view registration, disconnection, session management and consultation of components.

For trainee professors who have found technical difficulties on our platform have shown their demotivation proposed compatibility between the navigation engines and also the time of the use of tablets or smartphones, also the absence of a help of How to use the E-learning platform.

Figure 5; the pedagogical quality of the electronic device “platform”: The pedagogical quality

Table 7. The learning quality of the E-learning platform

Appreciation	Table of pedagogical quality of the platform		
	Yes	No	Without opinion
Acquisition of new skills	100%	0%	0%
Discover a new method of learning	76%	13%	11%
Learning resources	62%	15%	23%
Varied teaching methods	92%	8%	0%
Evaluate students objectively	22%	78%	0%

of the platform refers to its learning action and its capacity to offer opportunities to develop skills, to vary teaching methods or to objectively evaluate learners.

3.3 Principles of Satisfaction and Preference for the Platform

Compared to the satisfaction and preferences of the platform, 100% estimated abstracts, MCQs, training, security and exam sessions, this means that the culture of students today is contaminated by networks

Table 8. The learning quality of the E-learning platform

Degree of appreciation	Table of satisfaction and platform preferences			
	1	2	3	4
The courses summarized.	0%	0%	0%	100%
Detailed courses.	12%	54%	11%	23%
The agendas	30%	24%	32%	14%
MCQ	0%	0%	0%	100%
Subjects dissertations.	24%	45%	18%	23%
Forget and chate	0%	0%	0%	100%
Exam preparation sessions	0%	0%	0%	100%
Secure access in own session	0%	0%	0%	100%
the vote	2%	23%	61%	14%

Table 9. The aesthetics of the E-learning platform

Degree of appreciation	Table of aesthetics of the E-learning platform			
	1	2	3	4
Typography	9%	29%	23%	32%
Graphics	12%	3%	38%	35%
Choice of colors	2%	21%	25%	24%

Social responses to their cats loves, so the summaries are a consumer action with the minimum of effort Conversely, on the interpretation of the ease of learning and the quality of the documents, the use of the facets of the platform was not estimated in the same way by everyone and problems of compatibility, downloading, Orientation have hindered their training actions. We recall that 24% of trainees gave this indicator 1/5, 35% gave only 2/5, and 37%, who gave the average of 3/5.

Figure 6; ergonomic platform design: Following the questionnaire in Annex 9, the satisfaction of the target population with regard to the aesthetics of work was average in the majority, the following table illustrates the results extracted following our survey. Compared to the aesthetics of the platform. The net surfers estimate the colors differently. Despite this diversity of ergonomic perception of the platform, we note the presence of a typographical quality (the choice of letters and writing obtained a significant average of 62% of 3/5 and more). While the quality of graphic design and the majority of our trainees with an average of 77% equal to or greater than 3/5 estimated use of drawings and diagrams. In another register, the choice of colors shows values of 2/5 on 5/5 but always with agreement and approval of the majority of the trained view simplicity, its accessibility, its operability and its color consistency used with a value of 67% greater than or equal to 3/5.

4 Conclusion

If the problem of integrative alternation poses the difficulty of articulating training between workplace and place of initial training. The adoption of this imperative of qualification and socio-professional integration therefore challenges us to consider the contribution of distance education in the process of building professional and personal identity.

The daily reality of the training shows limits to the establishment of a common culture of trainers, pedagogical counselors and tutors in training. The shared and argued vision through the articulation practice-theory-practice shows an absence of interaction and interactivity. The difficulties for the trained are of great size to establish the bridges of continuity and reputation between the two fields of formation. The conceptualized E-learning platform would be a coveted solution. The distance training systems put in place allowed us to vary the modes of learning, the training itineraries and the organizational and collaborative approaches of the initial formation.

This new training process creates favorable conditions for investment, personalization of career paths and self-management of professional skills. In a different way, asynchronous learning allows self-training and self-evaluation outside of time school. We note learning, connectivity and interactivity times “10pm to 2am”, which confirm the increase in cognitive engagement time and idea debate among adult learners. “Any time and place”. We note that the implementation of this training system is not an exclusively pedagogical or exclusively virtual action, but it is a didactical pedagogical technology training engineering. The design highlights positioning tests, an engineering analysis of needs, planning stages and teaching strategies for diverse and diverse learning. For example, setting up our training system initially analyzed the target population from a specialist point of view. He also specified the aged and gender omen variables, preferential learning styles (manipulator, convergent, divergent, and assimilative) according to KLOB’s experiential learning theories. Our platform has made available to trainees a variety of training course choices and learning units, shared note taking, abstracting, QCM and essay topics.

In short, if we were to conclude in one sentence, we would say that to conceptualize an E-learning device in a context of professional training. The fundamental thing would be to act, interact and pro-act in the logic of the profession of information systems engineer, but also of the pedagogue to see the humanist anthropologist. In this perspective, the injection of Socrates “know yourself” becomes more essential than ever since these computerized environments correspond to a role play from which we must not only be a perfectionist

technician, but Especially a being, a social subject, a subject of law capable of reconfiguring his resources in a conscious and autonomous way. This mode of organization agility allows the creation of collaborative states of mind, innovation, creativity and powers of reflection and adaptation in front of this virtual environment.

References

- [1] Bjean. The role of e-learning in business, account rendering: The role of e-learning in enterprise. February 2014.
- [2] Wallet Jacques. Education technology and governance of education systems, in education technology b. charlier, f. henri, (branch), education technology. -“in press”, 2010.
- [3] Tchounikine P. for a computer science environment for human learning revue 13. *information Interaction intelligence*, Vol 2, n°1:59–65, 2002.
- [4] Walloon telecommunications agency, what is e-learning? article of 28 january 2008.
- [5] Perriault Jacques. the various platforms of online training. *Paris: Edition Odile Jacob*, page 266 p, 2003.
- [6] Pernin J.-P. and Lejeune A. Models for the realization of learning scenarios in.vers a method for the implementation of e-learning devices. amine boudefla school doctoralel stic. Tlemcen 2011.



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