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Digital in the administrative management of Moroccan School: Contributions, Challenges and Constraints

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ABSTRACT

The integration of ICT in school management is now becoming a necessity to adapt to the current global changes and to attach the motivation of leaders to join a process of planning and governance of high quality educational projects. Today, the implementation of digital institutions is characterized by two paths at two different speeds a first the implementation of ICT in the course of education whose subject occupies the interest and use the budget of all innovation projects and the other path that is the digitization of the administration is ranked second in the innovative priorities.

Our intervention is part of a technical-pedagogic approach that will focus on an action research work in which, we will try:

First, to implement an accessible digital tool, facilitate and organize project planning and provide ways to govern and control the quality of administrative acts.

Then, We will show the first results of the experimentation of this tool in our research context represented by 335 directors of schools of the provincial delegation of Taza. Morocco, highlighting the contributions of the digital on administrative practices at all levels.

Finally, we present the challenges identified by our system to enhance the quality of school management and professionalize the act of management of human and material resources and on the other hand we will focus on all the constraints and resistances raised which may hinder this development and innovation action

Key words : School Administration, Digital, Professionalization, Quality, Constraints..

1. INTRODUCTION

The integration of ICT in the management of schools is now a necessity to rebalance the evolution of the management of our schools to dynamic global changes.

Being qualified with precision and speed, the new technological tools are called to guarantee an optimal quality of management and of governance and to facilitate the communication between the actors within the establishments. This article is organized according to a triple action approach. First of all, it is a matter of setting up a conceptual framework that facilitates the understanding of the ideas put forward in our research. Then it is an analytical approach, through which we focus on the characteristics and needs of our research population. Finally, set up and verify the contribution of a digital tool on the managerial quality through an empirical study.

In the same perspective, our presentation will highlight all the constraints that hinder the promotion of the use of digital in the educational managerial framework.

We conclude with the perspective of our research. which puts the technical level of the speakers and the nature of the training received in question.

2. THEORETICAL FRAME

The multiplicity of missions and tasks of the administrative actors of a school was the subject of our theoretical intervention and to establish a repository of skills of the professions of pedagogical manager (director, censor, supervisor, and economy) [2]. In this sense, the goal of our digital tool is identical for all users and aiming to improve the resource management process to ensure a high quality of service [3] and optimal development of the institution.

Our conceptual analysis will also aim at clarifying two terms "e-administration" and "e-governance" [4]. Both concepts are included in the Education Sector Reform and Modernization Plan by adopting a rational structuring based on management and management by new methods and new tools tinged with technology [5]. This reform is also a motivating factor in the sense that it offers the possibility to plan and evaluate projects with new technologies.

In addition, the classification of digital tools has been the subject of several studies, some distinguishing between reference tools and computerized tools [6]. While other model tools in two axes; the first concerns the infrastructure (hardware, telecom equipment, etc.) and the second concerns the software (the various systems for managing content and

decision support, etc.) [7]. We also add the classification according to how we distinguish between open source tools, collaborative tools, mobile tools and interactive tools [8].

3. METHODOLOGY

Our work is based on a scientific methodology that aims to experiment with a digital tool in the administrative sector and identify the contributions and constraints of its use by the directors of Moroccan schools

To do this, our approach consists in respecting the steps of an engineering of the devices namely:

 In the first place, we will conduct an analysis of the needs of our research sample in terms of the use of digital,

Then we will move to the design of the digital tool after doing an analysis of a set of devices to exploit a tool specific to the reality of our context of our research.

 Third, we will implement our research tools with monitoring and evaluation tools to identify the contributions and constraints of our work.

    In the end we will proceed to the hot and cold regulation of our subject in terms of design, guide, processes and contents.

1. Analysis of the needs of our sample:

Our research sample is formed by 335 managers belonging to two categories which have undergone different training courses:

73 of the cycle of training of administrative staff - initial training of 9 months and 262 leaders affected by the movement ISNAD [1] and who have undergone continuous training upgrade.

The following table presents the categories and missions of our research population **Table 1**

Table 1 : Research population

		Primary	**143**
Total 193	School directors	collegiate	**29**
		Secondary	**21**
113	Supervisors General	collegiate	**61**
		Secondary	**52**
29	censors	Secondary	**29**

The request for the needs is made following a questionnaire which revealed the following results **Table 2**

Table 2 : Results of Survey 1: before using the computer tool:

Skill	Project planning	Management of activities	Resource Management	Management of the premises	Follow the funding
Yes	100%	100%	90%	90%	60%
No	0%	0%	10%	10%	40%

2. Engineering of the digital tool

        Our dispositive is characterized by completeness and variety; it offers opportunities for short, medium and long-term planning,   of piloting and evaluation as well as weathering by referring to the legendary colors of (indicators of evaluation : red means regulation urgency, and green reflects controlled action).

Likewise, our tools are intended not only for a director but for all the leaders of a school according to their mission, namely the director of the school, the censor, the supervisors general, each of whom will find his specific part with the applications. (Figure1)
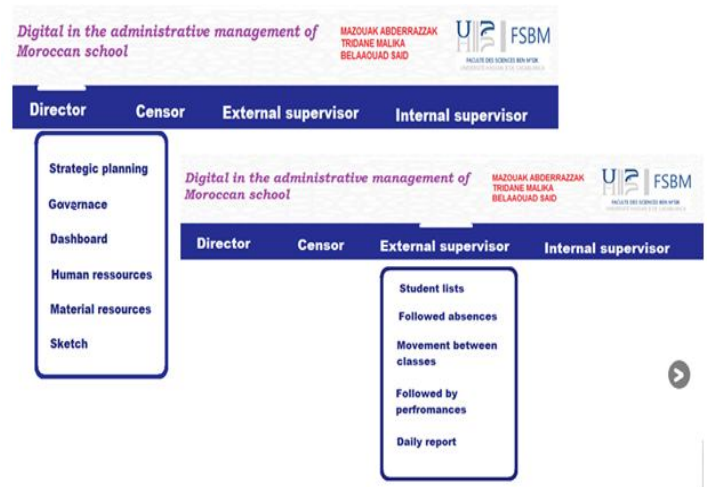

Figure 1: cover page: the tools for each category

The use of digital technology is possible for all managers in all institutions and also other stakeholders in the field of education who want to develop their management of learning or institutions, with a wide margin of choice of language, colors and tools.

4. RESULTS AND DISCUSSION

1.Implementation and contributions of the digital tool
Our experimentation is done in a simultaneous way by targeting three categories of educational actors namely: the directors of the establishments, the pedagogical sensors and the general supervisors.
The following tables represent the results obtained following the use of our digital tool during a period of 4 months spread from October 2018 to January 2019 (first semester)

Results of Survey 2: After using the computer tool:
Table 3,4,5 shows the different results after using the computer tool.

Table 3 : Contribution of the digital device on managerial practices

		School directors		censors		Supervisors General	
Numerical needs	Institution project planning		Followed by school life			Attribution of school certificates	
	Dashboard		Follow the program	100%		Followed absences	
	Pilot human resources	90%	Track educational performance	100%		Followed by the mobility	
	Manage the premises	80%	Extracurricular activity	80%		Daily report	100%

Table 4 : Contribution of the digital device on managerial practices

Skill	Follow school life	Follow the educational program	School failure	Performance and success	extracurricular activities
Yes	80%	70%	100%	100%	70%
No	20%	30%	0%	0%	30%

Table 5 : Contribution of the digital device on managerial practices

Skill	To follow The mobility	Follow the absence	Educational performance	School wastage	School certificate	the daily report
Yes	80%	100%	70%	100%	100%	90%
No	20%	0%	30%	0%	0%	10%

The results mentioned in Tables 3, 4 and 5 testify the remarkable contributions of the proposed digital tool on the managerial practices of the pedagogical leaders on the three levels:
- For the directors of the institutions, they pointed out the advantages of the tool on their actions of planning of the projects and the activities, on the follow-up of the resources and the premises with an average contribution on their management of the financial resources
- For the censors at their turn, they considered the contribution of the tool in the planning of educational and extracurricular projects, the management of school success and failure, and also to control the school life of the school.
- For general supervisors, the tool has proved its place in the daily management of this category, by providing statistics on the absence and mobility of students helping in the drafting of the daily report and the attribution of school certificates.

After four months of using our tool, we distributed a questionnaire to our sample to measure its satisfaction with our tools

Table 6 : Satisfactions for the digital tool

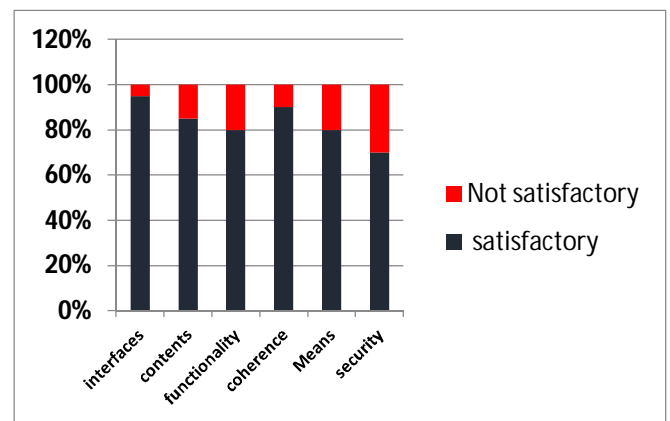| Quality	Degree of satisfaction	
	satisfactory	**Not** satisfactory
interfaces	95%	5%
contents	85%	15%
functionality	80%	20%
coherence	90%	10%
Means	80%	20%
security	70%	30%

Figure 2: Percentage of Satisfactions For The Digital tool

Table 6 and figure 2 reflects a real appreciation of this scheme and the strong assessment of its impact on the development of governance planning skills and self-evaluation of educational institutions. In addition all the practitioners appreciated the

interfaces and the contents (more than 80%) proposed, that one has the functionality and designates it. Remains pointed out that a significant proportion of users have shown their fear of data security (30%)

2 . The constraints and the resistances of our work

Although our work has defended its place in the administrative management and its contribution in the management of schools, we have noted some constraints (interview + questionnaire) presented as follows in table 7 and figure 3.

Table 7 : Problems that limit the use of our digital tool

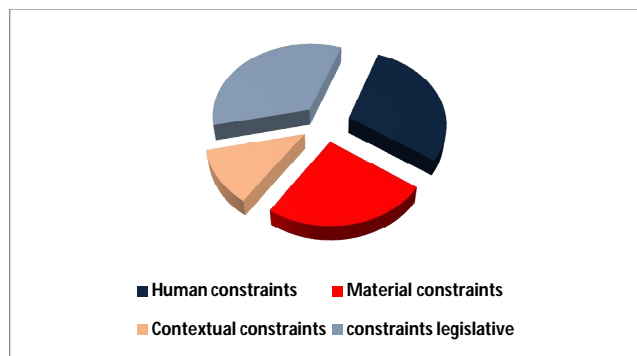| Human constraints	Material constraints	Contextual constraints	constraints legislative
29%	25%	12%	34%

Figure 3 : Constraints 0f Our Digital Tool

- **Human constraints**
A major problem that has hindered the use of the tool by managers is their level of technological skills (29%) which has influenced their motivations and create resistant forces.
- Material constraints
This material constraint remains moderately low compared to our population so the majority of the difficulties are raised in the rural environment, and the majority of leaders evolve with their own resources.
- **Contextual constraints:**
We noted that the educational context is aware of the importance of ICT in administrative management, so we did not find too many obstacles in our research context.
Legislative constraints:
We noted that the major constraint of our work lies in the legislative texts and the rights and duties of the pedagogical leaders. The pedagogical managers refused to use our tool without permission from the provincial delegation; others resisted the data of our tool for security reasons
3 .Challenges to be addressed through the use of digital

- Challenges 1 in the short term: upgrade our tool by revising user guides, the proposed design and download quality of applications to meet the needs of users.

- Challenges 2 in the medium term: Increase the values of the use of the tool in the financial sector; and also in school life management and student performance, always signaling that data remains secure by using the " offline work " tool
- Long-term challenges 3: Local and regional strategy to put in place an administrative management system.

5.   CONCLUSION

In the third millennium we can't deny the blatant contribution of ICT in improving the quality of planning, governance and management within schools.
The integration of our numerical tool has confirmed this reality since it could modify the managerial practices of our samples on three different levels:
The primer is in relation to their administrative skills which, moreover,
Firstly, is in relation to their administrative skills which, moreover, its use has provided opportunities to professionalize the act of piloting and managing the resources and the school performance for the different levels of managerial stakeholders.
The second axis is in relation to communication skills, because the use of our tool is a model of communication and publication of efforts, and work and even the results for the external social context.
The third is in relation to the emotional aspect, since the use of our remarks has given the opportunity to leaders to break with the misrepresentations of new technologies and the resistance of administrative actors to their. And present to a scientifically proven reorganization of daily administrative practices.
In conclusion, we believe that specific and in-depth training in the use of ICT in the administrative is desired given the growing gap between the tools and applications that are forcibly entering the school sector and the limited technological skills of the practitioners.

REFERENCES

[1] Gravel , M., & Massé , **D. Programme de formation des cadres de l'administration pédagogique.** MENFP *Avril 2014*.

[2] R .Pourmirza K, Frank, S.Laei, S. Shahsavari **. A study of the status quo and favorable status of succession management deployment from the viewpoint of faculty members at Kermanshah university of medical sciences** International Journal of Engineering & Technology, Vol7 (N°2.38) (2018) Special Issue 13. www.sciencepubco.com/index.php/IJET Faculty of Education, Universiti Kebangsaan Malaysia, Bangi .2018
https://doi.org/10.14419/ijet.v7i2.13.13067

[3] Y Aichi, M Bassiri,S. Benmokhtar and S .Belaaouaad.**The digital assessment center and the evaluation of soft skills .**ASIA LIFE

SCIENCES Supplement 16(1): 1-8, 2018 The Asian International Journal of Life Sciences.Received 15 April 2018; Accepted 15 May 2018

[4] A.Mazouak, M.Tridane;S. Belaaouad. **The impact of new technologies on governance and quality management in schools in morocco.** International Journal of Engineering & Technology**,** [S.l.], v. 7, n. 4, p. 5598-5600, apr. 2019.
https://www.sciencepubco.com/index.php/ijet/article/view/21487/15252

[5] R. S. Kaplan et D. P. Norton. **Comment utiliser le tableau de bord prospectif ?** Editions d'Organisation 2001

[6] Z. Boudiar, C.Jbari. **lesTICE un outil efficace pour décider dans l'établissement'** p2 diouan des imprimés universitaires Alger 1998

[7] C. Mendoza, M. H. Delmond, F. Giraud, H. **Loning. Tableau de bord et Balance Scorecard.** Guide de gestion revue fiduciaire 2017.

[8] Eva Kasparova. **ICT Usage in the Czech Business and the Strategy of Digital Literacy in the Czech Republic.** International Journal of Advanced Trends in Computer Science and Engineering. Volume 8, No.1.3, 2019
https://doi.org/10.30534/ijatcse/2019/1181.32019