The Impact of Organizational culture on the effectiveness of technological change: the case of distance education in the Algerian university in the area of the emerging covid-19.

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Abstract:
The study aims to measure the type of organizational culture at University of Mascara, and the extent of its impact on the technological organizational change, which the university carried out during the Covid-19 pandemic in order to study students remotely, and the study concluded that the type of organizational culture at the university is a hierarchical culture, so that individuals follow the rules and instructions, and that the technological change carried out by the university did not give the required and prescribed results by the authorities. The results of the study indicated that a creative culture must be adopted for the success and flexibility of organizational change in the emergency conditions in which we live and The restrictions imposed on us by COVID-19
.**Keywords**: organizational culture, Competing Val¬ues, organizational change
Jel Classification Codes : M12, M14.

1. INTRODUCTION

The changes that the world is witnessing affect the organization clearly and significantly, and considering that the only constant thing is that everything changes, so organizational change is considered one of the important and urgent issues for the success of organizations in the current environment that is characterized by complexity, instability and successive developments fast in all areas.

In order for the organization to ensure its survival and continuity, it must adapt to these changes, and maintain its balance in its environment.

One of the most important of these changes that occurred in the world is the emergence of the new Covid- 19, which changed the pattern and way of functioning of organizations.

The Algerian University had to adapt to this change to maintain its effective role in the formation of students at various levels, through the use of available technological means such as software, applications and websites to provide remote lessons or provide distance education service, and this experiment is somewhat new in terms of organization and coordination for the university, as it made a technological change that was not taken into account, and in an urgent manner in order to achieve the pedagogical goals set by the university administration.

This change requires focus and attention to the organizational culture prevailing in the organization in order to achieve organizational endeavors and achieve the desired goals. In the organization, it has an important role in shaping the success of organizational change as it reflects the identity of the organization.

Therefore, the research came to shed light on the importance of the type of organizational culture prevailing in the university on the success and flexibility of the organizational change process, in order to respond to emergency and highly complex conditions. The third topic presented the practical and applied side, conclusions and recommendations.

2. research methodology:

2.1. Search problem:

In light of the changes that the world is going through, the most important of which is the emergence of the new Corona virus, it is imperative for the Algerian University to make a technological change represented in the use of technological tools, such as applications, websites and programs in order to deliver lessons remotely to students.

The researchers Cameron and al, indicated that there are four types of organizational culture, namely clan culture, creativity culture, hierarchical culture and market culture, so we will try through this to measure the type of organizational culture prevailing in the university and the degree of its impact on organizational change.

From this centered the problem of the study, in which we try to answer a fundamental question:

What is the impact of the type of organizational culture on the flexibility of technological change related to distance education at the university?

To analyze this main problem, we use the following sub-questions:

1- What is the concept of organizational culture?

2 - What is the type of organizational culture prevailing in the university, and what is the type that activates the process of change?

3- What is the reality of change within the university?

2.2. research importance:

The importance of the research is reflected in the following:

- The importance of the research lies through the topic we are dealing with, as it is characterized by modernity in terms of highlighting the most important organizational concepts in general, which is the importance of the type of organizational culture on the success and effectiveness of organizational change in the Algerian university.

- Reaching to clarify a picture of the importance of organizational change, diagnosing and measuring the type of organizational culture, and making the necessary recommendations to achieve the organizational goals set by the university.

- Attempting to provide solutions to problems through the applied study and the practical side to identify the nature of the relationship and the degree of influence of organizational culture on organizational change.

2.3. research aims:

- Measuring and knowing the type of organizational culture prevailing in the university.

-the importance of paying attention to organizational culture, which has a critical role in the success of any organizational change**.**

2.4. Hypotheses:

H$_1$: There is a significant correlation between the type of organizational culture and technological change**.**

From this first hypothesis, the following sub-hypotheses emerge:

H$_{1-1}$: There is a significant correlation between clan culture and the success and effectiveness of technological change.

H$_{1-2}$: There is a significant correlation between the culture of creativity and the success and effectiveness of technological change**.**

H$_{1-3}$: There is a significant correlation between market culture and the success and effectiveness of technological change.

H$_{1-4}$: There is a significant correlation between hierarchical culture and the success and effectiveness of technological change**.**

2.5. Previous studies:

2.5.1. Study under the title:Organisational culture and change: implementing person-centre care , Eric D, Carlström Inger Ekman, Journal of Health Organization and Management, Vol 26,2012.

The study aims to identify the relation between organizational culture and resistance to organizational change for a new project to upgrade and develop the health system in Sweden. Questionnaire method for the purpose of data collection, and the study concluded that the organizational culture based on competencies reduces routine and enriches acceptance of the change process and reduces resistance to change and helps to eliminate and get rid of old habits, and the results indicate that the culture based on flexibility, adaptation and trust is in line In a negative way with stability within the organization, and the success of the change program in the Swedish health

sector is also linked to coordination and attention to common values and the ideology of individuals.

2.5.2. Study under the title: Effects of Organization Culture on Change Management: A Case of the Vocational Training Centre for the Blind and Deaf Sikri, Philip Onyango, European Journal of Business and Management, Vol.6, No.34, 2014.

The study aimed to examine the causal effects of organizational culture on the conduct and management of organizational change. The study relied on the descriptive approach. A questionnaire was distributed to 188 employees in the Vocational Training Center for the Blind and Disabled, including 16 professors, 22 professional workers, 6 members of the Board of Directors. And 4 technicians, 80 clients, and 60 partners and stakeholders in order to collect data, and the study found that 74% of the respondents agree that organizational values, customs and traditions are part of the organization's culture and directly affect the effectiveness of organizational change, Studies indicated that supporting the strategic summit facilitates the process of change, and the study recommended the need for senior management to pay attention to organizational culture and its development.

2.5.3. A study under the title: The influence of organizational culture on attitudes toward organizational change, Malaysia, Md Zabid Abdul Rashid Murali Sambasivan Azmawani Abdul Rahman, journal of Leadership & Organization Development, Vol. 25,2004.

The study aimed to search for the extent of the impact of organizational culture on attitudes towards organizational change in Malaysia. The study focused on the research of Goffee and Jones and Dunham et al. The study relied on a questionnaire tool for data collection and was distributed to 258 industrial establishments in Malaysia. The study concluded that there is a relation between organizational culture and the effectiveness of behavior and trends towards the process of organizational change, and the study also found that different types of culture have different levels on the effectiveness of individuals' behavior towards change, and the study recommended the need for managers to understand the type of prevailing culture before starting in any change process.

3. literature review:

3.1. Organizational change :

3.1.1. Definition of Organizational Change:

The researchers cited many definitions of the term organizational change, including the following:

Organizational change is an inevitable result of the influence of the internal and external environment, in order to achieve adaptation and balance for the organization with its environment, and to achieve competitiveness and reach the established goals (DAFT, 2001).

It is also defined as the result of a collective process during which the organization experiments with new organizational modifications, which may be partial or total, and develop them (MULLER, 1999)

It is the organization's transition from the current situation to another desirable future situation (Selmin Nurcan)

Human behavior is defined as all the activities and tasks that an individual performs during his daily life To satisfy his needs and achieve his goals, as these activities represent the outcome of the interaction of personal and environmental factors surrounding . (Amal Hefnawi. Azoui souria, 2021)

3.2. Reasons for Organizational Change:

3.2.1. External reasons: represented in the market, the intensity of competition, technological development, and social and cultural change**.**

3.2.2. Internal reasons: It is represented in the managers' vision, which includes another different, independent look at the old ones inherited from the past, such as launching new products and bringing in new competencies, in addition to the increase in the organization's activity that necessitates an organizational change (Benoit & FRACI, 1998).

3.3. The stages of organizational change: Lewin presented a model of organizational change in three stages:

3.3.1. The dissolution stage: it means the elimination of old habits and practices and the adoption of new ones.

3.3.2. The transition phase: which is the initiation of the new work system and the actual experience of the change project.

3.3.3. The stage of freezing: This stage means the success of the change process, meaning change has become integrated through the performance of activities for the new situation and becomes spontaneous, and Lewin points out that reaching this stage may be difficult and long, according to the individuals or groups concerned with change (Piere, gilles, & richard, 2002).

3.4. Types of organizational change (lotfi & zeineb, 2007)**:**

3.4.1.   The gradual change: it is relatively slow and it is in a stable environment, and its effect is quite accurate.

3.4.2. Radical change: It is a complete and rapid change that occurs in the event of crises or the anticipation of their occurrence and affects all organizational levels and is studied by leaders, and is especially in an unstable business environment**.**

3.4.3. Learning organizational change: It is a new type that creates new rules for change, and it is related to structural change and change in competencies, and it is accompanying in all stages of change, and it expresses the future vision of the organization through the ccumulated experiences.

3.5. Areas of organizational change:

3.5.1. The strategy: the strategic change : according to the Mintzberg cube is the one that touches the mission and vision of the organization and rethinking the strategic positioning, the products of goods and services as a whole, and the regulated plan and application program, and strategic change can only be achieved through the actors from the organization (François, 2007)

3.5.2.   Technological change: the use of technological means, modern machines and available innovations in order to bring about a change in the production process or in the activities of the organization as a whole and it is linked to the organization's goals and mission and in order to enhance the capacity or competitiveness of the organization (Lekhal, 2011)**.**

3.5.3. structural change: It means making a change in the distribution of powers, roles and responsibilities, and the lines and channels of communication within the organization (Raymond, 2006).

3.5.4. Cultural change: Changing ways of working or thinking that are based on innovation and learning, which depends on questioning the current values and beliefs of the members of the organization. (Éric, 2009), and given the importance of organizational culture in the subject of organizational change, we had to clarify its concept, dimensions and types.

3.6. Organizational Culture:

3.6.1. The concept of organizational culture:

It is the set of common values, beliefs, knowledge, experiences, traditions and customs that are considered as a reference for members of the organization and are translated into their behavior and behavior within the organization (Jean & jacques, 2006)**.**

It is the set of knowledge that directs the thinking and actions of individuals within the organization. It is also a behavior and a set of shared values among the members of the organization (bertrand, 1991).

3.6.2. Components of organizational culture:

3.6.2.1. Beliefs: They are the common convictions among the members of the organization, and they include collective education, which is reflected in the way and style of thinking of the group and the organizational routine, and they affect the discipline and motivation felt by individuals and the active parties in the organization**.** (Sonia, 2012)

3.6.2.2. Legends: It is the stories of the Organization's heroes and their achievements in the business environment. Some of the historical events of the organization and predominated heavily and their goal is to strengthen cultural values within the Organization (Mandan, Amir, & Saadat, 2012).

3.6.2.3. Norms: and are laws for individuals working in the Organization, and are not written, but are inherited among them and are inherited within the Organization (Sonia, 2012).

3.6.2.4. Rituals: are frequent practices and activities by personnel and reflect organizational values. (Sonia, 2012)

3.6.2.5. Symbols: It is a set of signals, and may be a motion, a particular acting, form, number, or image indicate specific meanings known among individuals.

3.7. Effect of the type of regulatory culture on the process of change within organization:

The researchers Cameron aL has developed the competitive values model that classifies the core dimensions of the mainstream, strategic and moral focus, exclusivity, control and balance, so that the type of regulatory culture affects the process of regulatory change and its speed and effectiveness (Heilyn, Mayela, & kenneth, 2018)
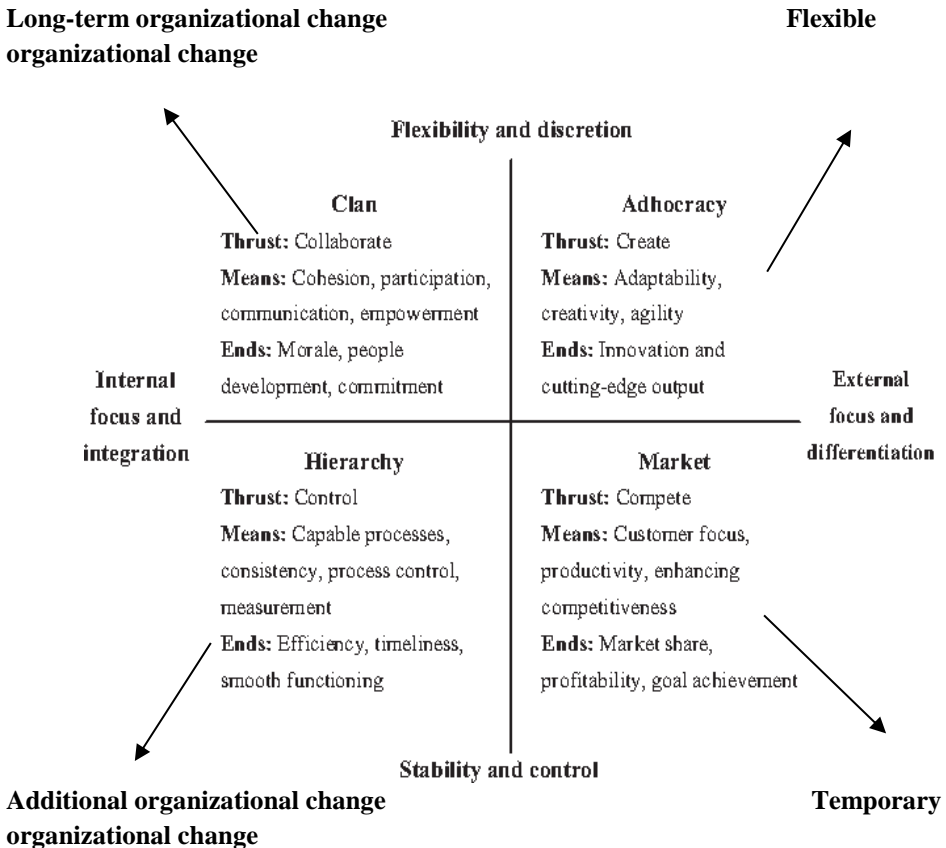
3.7.1. Culture of the clan: This culture is characterized by individuals' commitment, discipline and their loyalty to the organization, participating in decision-making, working within the team and collective cooperation, and the Organization for individuals working and their family. It is consistent with decentralization and its orientation in which we are inside, and the cohesion is prevalent. (Merve, Fazı, & Ciftci, 2015)

3.7.2. Hierarchical culture: is characterized by censorship and action according to the rules and procedures and the change in this type is only additional (Julie, 2014)

3.7.3. Market Culture: Featuring competitiveness, plans and objectives and achievement, and opening up on the external environment of the Organization, which adopts after external concentration, and the leader focuses on production and directing working personnel and acquiring the largest market share and the change is fast. (Hoang, 2009)

3.7.4. Creative Culture: Giving importance to flexibility, change and innovation, and the commander of the Organization is ambitious and takes the calculated risk and strategic focus be gaining new and growing resources. , And the change in which the conversion is to change the normal work pattern and is characterized by flexibility and efficiency and is the most response to severe change conditions and is constantly accelerated, and are appropriate for organizations that are active in a very complex and unstable environment. (Silva, Cyreneu, Marce, Ribeiro, & Phelipe, 2019)

Fig.1. Core dimensions framework of competitive values:

Long-term organizational change   **Flexible organizational change**

Additional organizational change   **Temporary organizational change**

Source: (Mecilhi, Reda, 2020)

4. Study Methodology:
4.1. study design:

The study relied on the descriptive analytical method, and a questionnaire was used as the main tool for data collection. The researchers relied on the theoretical framework in designing the questionnaire for the study.

4.2. Instrument validity:

The stability of the study was confirmed by extracting the Cronbach Alpha coefficient, in order to make sure that wrong data would not be obtained if the study was repeated, and the value of this coefficient reached the axes of the study by 0.746

Table 1. shows Reliability Statistics.

Cronbach's Alpha	N of Items
	62
,746	

Source: prepared by the researchers based on spss program

4.3. Sample Study: The sample of the study consisted of a group of professors, heads of departments and office assistants, the sample of the study consisted of 80 employees from Mascara University. The sample members were selected based on the ease of communication and the information was taken in a convenient way.

4.4. Distribution of the study sample according to personal data.

Table 2. shows the distribution of the sample (N=80) according to their sex.

		Frequency	Percent	Valid	Cumulative
Valid	male	46	57,5	57,5	57,5
	female	34	42,5	42,5	100,0
	Total	80	100,0	100,0	

Source: prepared by the researchers based on spss program

From table (2), we found that the highest percent of the total sample were male by 57.5%, while female were 42% of the total sample. This results shown clearly in the next figure.

Table 3. shows the distribution of the sample (N=80) according to their age.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less of 30 years	11	13,8	13,8	13,8
	between 30 to 40	42	52,5	52,5	66,3
	between 41 to 50	21	26,3	26,3	92,5
	more of 50 years	6	7,5	7,5	100,0
	Total	80	100,0	100,0	

Table N°03. prepared by the researchers based on spss program

From table (03) we found that 52.5%, of the sample (between 30 to 40 years) , and 26.3% (between 41 to 50 years) ,and 13.8% less of 30 years , while 7.5 % were more that, 50 years.

Table 4. shows the distribution of the sample (N=80) according to their experience.

		Freque	Percent	Valid	Cumulative Percent
Valid	less of 5 years	20	25,0	25,0	25,0
	between 5 to	25	31,3	31,3	56,3
	between 11 to	23	28,7	28,7	85,0
	more of 15	12	15,0	15,0	100,0
	Total	80	100,0	100,0	

Table N°04. prepared by the researchers based on spss program

It's clear From table (04), 25 of the sample members, represent 31.3%, (between 5 to 10 years), while 23, represent 28.7% and their years of experience were (between 11 to 15 years), following by 20 of the sample

members , represent 25 % , and their years of experience were less of 05 years, while 12 represent 15 % of the total of sample.

Table 5. Table (06) shows the distribution of the sample (N=80) according to their position in to university.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	theatcher	29	36,3	36,3	36,3
	office Head	20	25,0	25,0	61,3
	office	14	17,5	17,5	78,8
	ather job	17	21,3	21,3	100,0
	Total	80	100,0	100,0	

Table N°06. prepared by the researchers based on spss program

It is noted from the table (05) that the percentage of theatchers constitutes 36 .3% of the study sample, which is the highest percentage, then followed by 25% representing office heads, then 21 .3 % of the other jobs, and in the last rank 17.5% of the study sample are office assistant.

5.   **Study results and hypothesis testing.**

 5.1.   **hypothesis testing.**
 5.1.1.   **Main hypothesis:**
H_1: there is a significant correlation between the type of organizational culture and technological change.

Table 6. show linear regression between the type of organizational culture and technological change.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	,545ᵃ	,297	,260	,29887	,297	7,929	4	75	,000

a. Predictors: (Constant), type market, type hierarchical, type creativity, type clan

Table 06 show that the value of (R) between the type of organizational culture and the flexibility of technological change was estimated at 54%, and Rsquare, was 0.297, so 29% of the flexibility of technological change due to the type of culture.

The level of significant correlation between the type of culture at the University and the flexibility of technological change (sig) was 0.000, is less than the level of 0.05. So ,there is a significant correlation between the type of organizational culture and the flexibility of technological change.

5.1.2. Partial hypotheses:

Table 7. Coefficients

Coefficientsᵃ

Model		Unstandardized		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,104	,357		3,093	,003
	type clan	,162	,101	,184	1,610	,112
	hierarchical	,024	,069	,034	,341	,734
	Type	,295	,089	,360	3,337	,001

type market	,100	,072	,151	1,389	,169

a. Dependent Variable: value change

H$_{1-1}$:

Table (07) show,the level of significant correlation between the clan culture and the flexibility of technological change (sig) was 0.112 , its bigger than 0.05.

So, There is no significant correlation, between clan culture and the flexibility of technological change.

The table also points out that the regression equation between the culture of the clan **x1** and the flexibility of Change **y** can be written by:

Y= 1.104+0.162x1

H$_{1-2}$:

From table (13) the level of significant correlation between the creativity culture and the flexibility of technological change (sig) was 0.001 its less than 0.05.

So, There is significant correlation, between creativity culture and the flexibility of technological change.

The table also points out that the regression equation between the creativity culture **x2,** and the flexibility of Change **y** can be written by:

Y= 1.104+0.295x2

H$_{1-3}$:

From table (13) the level of significant correlation between the market culture and the flexibility of technological change (sig) was 0.169 its bigger than 0.05.

So, There is no significant correlation, between market culture and the flexibility of technological change.

The table also points out that the regression equation between market culture **x3,** and the flexibility of Change **y** can be written by:

Y= 1.104+0.100x3

H$_{1-4}$:

From table (13) the level of significant correlation between the hierarchical culture and the flexibility of technological change (sig) was 734 its bigger than 0.05.

So, There is no significant correlation, between hierarchical culture and the flexibility of technological change.

The table also points out that the regression equation between hierarchical culture **x4,** and the flexibility of Change **y** can be written by:

Y= 1.104+0.24x4

6. CONCLUSION:

We have reached that the type of organizational culture at the university is a hierarchical culture where the arithmetic mean is 4.04, the study samples were approved ,and the organizational change in the university has not achieved the expected results, where the arithmetic mean of technological change at the university was 2.09 , We also reached that creative culture is the type of presence within the university to make an emergency and flexible change that responds to all changes in the educational environment ,where the value of (R) between the type of organizational culture and the flexibility of technological change was estimated at 54%, while there is significant correlation ,between creativity culture and the flexibility of technological change sig =0.001, it means that the culture of creativity at the Algerian university must be adopted in order to make any emergency change against crises in the educational environment by following the following **recommendations :**

- Providing dynamic workplace.
- Focus on the external environment.
- Focus on leadership. And give more freedom to the decision to make the decision without reference to the central authority according to the situation n and make contact more horizontal
- Training personnel working to prepare for calculated risk
- The competency is an inevitable necessity to adopt creative culture within the university
- Strengthen and promote and disseminate competitive values among individuals within the university.
- Adopting regulatory change in accordance with theories in order to minimize resistance to change.
- The leader must be the initiator of change.
- encourage the change team with material and moral rewards.

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