



**QUALITY MANAGEMENT IN EDUCATION SECTOR PART II:  
QUALITATIVE ANALYSIS OF THE EDUCATION AND TRAINING MACRO-PROCESS IN  
MOROCCO AND QUESTIONNAIRE DESIGN**

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Abstract

Qualified as multidimensional; organizational climate of the educational system is an environment where the variables interact with the teachers' personalities to produce perceptions that determine the quality of work life. The collection of these perceptions downstream to the education system requires a deep knowledge and requires the mobilization of diverse and complementary tools to assess the impact of organizational climate on teachers.

To better define the generating sources of risk or well-being systemically, we have developed a working methodology basically centered not on the problematic of psychological disorders but on the logic of management and anticipative prevention, inspired by international standards of quality and auditing such as ISO 9000 family and BRC Global Standard for Food Safety.

While keeping the mapping macro-process of education and training as a visual means of effective communication, risk analysis strategy takes over. From a strategic point of view, we suppose that all processes that they are of implementation, of support or management are priority and suspect to be critical processes. The concept is based on the principle of "divide and rule"; because more we attack the small segments more one defined the problems in a systematic way, this allows to list and to highlight all variables of the organizational climate susceptible to be a risk or well-being factors for the teachers.

The strategy of risk analysis is made according to a logical triphasic process including the identification, the classification and the evaluation, it offered us a basket of successful tools which allowed to conceive the second product of this work after the mapping of macro-process namely: The elaboration of a large-sized questionnaire inspired on the standards of Quality Management Systems, where questions accurately reflect the various variables of the organizational climate symbolizing a teachers' sphere perception.

**Keywords:** Strategy Risk Analysis, Standards ISO 9000, BRC, Deming Wheel, 5M method.

Abbreviations :

BRC: British Retail Consortium

HACCP: Hazard Analysis Critical Control Point

WHO: World Health Organization

HAET: Higher Authorities of Education and Training

RAET: Regional Authorities of Education and Training

## 1. Introduction

The mapping of macro-process of education and training developed in Part I is the visual product of the process approach and reflects the splendor of the education system with its various joints, interactions, stakeholders and resources, and whose contribution to the functioning generates a climate of anxiety or well-being. Hence the interest to identify the variables of organizational climate can be considered as factors stimulating or inhibiting teachers in the workplace. And to achieve this objective; the mapping gives way to the strategy of risk analysis "successfully done with other major health and safety problems with success for other major problems of health and safety" (Leka, Griffith, Cox, 2004) [6].

Such a strategy is to identify and assess the work environment variables in an early and proactive way by adopting authentic concepts quality.

## 2. Materials and Methods

The synthetic representation of macro-processes can generate in a participatory manner of questions about the mode of operation, the sequence of activities and relationships between actors and beneficiaries.

The strategy of risk analysis consists in systematically and permanently diagnose of macro-processes of education and training to identify the causes of non-performance in order to establish measures of early prevention and implementation of tracks improvement.

For the collection of the information we based ourselves on the daily experience of the teacher, on the interviews with the educational actors, also reference texts. All this information constitutes the perception sphere of teachers. Our strategy of risk analysis spreads out on 2 phases:

### 2.1. Phase I: recencement risk

#### 2.1.1. Risk definition

Risk as defined by the WHO "is an event or situation that has the potential for causing harm. Harm refers to physical or psychological deterioration of health" (Leka, Griffith, Cox, 2004) [6].

Like the management standards of quality as the BRC, the notion of risk has been introduced in the new standard ISO 9001 version 2008. In the chapter "Introduction - General" (0.1) we read: The design and implementation of a system of quality management take account of the environment of the organism, changes in this environment or the associated risks in this environment .... (ISO, 2008) [3].

On the other hand there are 3 types of variables generating risk or well-being according to the classification of Likert (1974) [7] as shown in the Table 1.

#### 2.1.2. Informal census

The census provides an initial list of potential variables "situations or aspects" assigned to each process in the education system and may be harmful or motivators for teachers. It is made by informal discussion via individual and collective brainstorming with colleagues and teaching inspectors, also during the training days. Then review the BRC Standard is extremely useful as it allows you to consolidate and build on what has been identified with educational stakeholders.

### 2.1.3. Checking the completeness of the risks list

Checking was based on two methods namely:

⊕ The 5M method or Ishikawa diagram:

To better identify the generating causes of problems the method of "5M" is used to identify the variables of organizational climate by limiting any risk of forgetting. It raises the question: is there any situation or aspect derived from educational resources, infrastructure, equipment, teaching staff and management may be a risk factor or well-being? A complete inventory of variables is then accomplished without omission.

⊕ Sources of information for risk analysis

The required information about the potential risks associated with organizational climate can be pulled from several sources and reference texts as:

- National Charter of Education and Training;
- Emergency plan;
- White Paper;
- Concepts of quality management;
- Psychology of work;
- Publications of the WHO about working conditions;
- Files review of complaints from teachers;
- Research and scientific articles;
- International information network.

### 2.1.4. Elimination fanciful variable

We finally retain only the sources that may significantly affect the well-being of teachers in the workplace. For example, the claim of professional housing is not a significant source of risk even though it may trigger to complaints from teachers.

### 2.1.5. Classification of variables

The strategy of risk analysis allowed us to identify 335 questions accurately reflects the variables of organizational climate, and we spread over 9 dimensions namely:

- Market orientation, commitment to the vision and values;
- Leadership and strategic planning;
- Human resource management;
- Resource allocation "tools and resources" area of school life;
- Implementation of academic services;
- Control, monitoring, results and performance;
- Improving the educational process;
- Communication;
- Systems representation of teachers and learners.

These dimensions are inspired by the 8 principles defined by the ISO 9004 quality management systems' guidelines for the improvement of the performances (ISO, 2000) [4], namely:

- Customer Orientation;
- Leadership;
- Staff involvement;
- Process approach;

- Management by system approach;
- Continuous improvement;
- Factual approach to decision making;
- Mutually beneficial Relations with suppliers.

## 2.2. Phase II : Risk assessment

The risk assessment for the various variables contains 2 steps:

### 2.2.1. Assessment of exposure intensity

This is the quantitative estimation of satisfaction or dissatisfaction towards the variables of organizational climate perceived by teachers, a weighted scale of 1 to 5:

- For satisfaction: 1 = Low Satisfaction; 5 = High satisfaction.
- For dissatisfaction: 1 = Low dissatisfaction; 5 = High dissatisfaction.

Stressing in this context that the satisfaction and dissatisfaction are two distinct concepts, according to the bifactorielle theory of Frederick Herzberg (Herzberg, Mausner, Synderman, 1959) [2], which stipulates that the satisfaction and the dissatisfaction in the work act independently.

### 2.2.2. Evaluation of the exposure frequency

This is a quantitative estimate of the exposure frequency to variables of organizational climate perceived by teachers, weighted on a scale of 1 to 3:

- 1: Rarely: once every six months to once a year;
- 2: From time to time, once a month;
- 3: Always: every week to every day.

For every question we associated two modalities of answer crossed namely the intensity of satisfaction or dissatisfaction and the exposure frequency.

According to these modalities shown in Poster 1; Yes puts on the way of satisfaction-frequency, and No puts on the way of dissatisfaction-frequency, in other words:

- A person who says Yes to simultaneously assess the level at which it is satisfied and how often.
- A person who says No to simultaneously evaluate what level she is dissatisfied and how often.

The questionnaire designed at the end of this phase was tested on a group of five teachers who completed in a week, and found it perfectly adapted to the educational system. After validation, it was subjected to a population of 250 teachers spread over 20 middle and high schools.

## 3. Results and Discussion

### 3.1. Recencement risk

#### 3.1.1. The 5M method or Ishikawa method

The strategy of risk analysis has enabled us to design a voluminous questionnaire with 335 variables representing various organizational situations and we have distributed over 16 sub-clauses, they even spread over 9 main clauses.

Inspiring from the diagram of ishikawa, we can represent the contribution of 9 families of variables of the organizational climate to the infringement on the performances of the educational system as shown in Poster 2.

### 3.1.2. Concept of Deming

The concept of PDCA is at the heart of our qualitative analysis, and generally, it must be said that wheel is a technique that governs the whole questionnaire, as far as we notice that the questions are either type Plan, Do, Check or Act. The Table 2 presents the analogy between PDCA and clauses of the questionnaire.

### 3.1.3. Audit concept:

The design and formulation of the questionnaire is similar to a form of mock audit insofar as it is inspired professionally from international repositories audit namely:

- The ISO Standard 19011: Quality and environmental management systems auditing (ISO, 2012) [5];
- The BRC Global Standards which included the HACCP method (BRC, 2008) [1].
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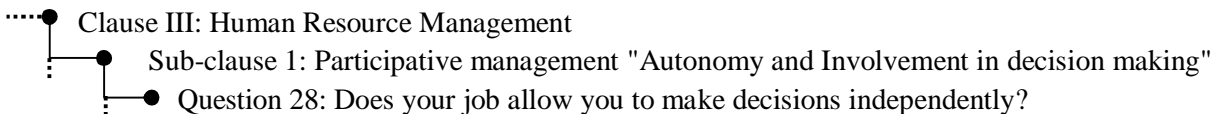
### 3.1.4. Organizational levels and the principle of ISO 9001

This questionnaire model keeps five main chapters of the standard ISO 9001 version 2008 so as to cover all organizational levels involved in the education system as illustrated in Table 3.

\*Self-management of school resources has been partially implemented with the emergence of the project: School success for all.

\*\*Note also that the measurement, analysis and improvement of the results and the detection of non-compliance needs to tap not only data from standardized tests, but also evaluations of class.

### 3.1.5. Model tree view of a question



## 3.2. Risk Assessment

### 3.2.1. Assessment model of a variable

The combination of the intensity of satisfaction with the frequency of this satisfaction can acquire the organizational climate variables a two-dimensional sense and logical assessment as indicated in Table 4.

### 3.2.2. The three Why

- ⊕ Type of weighting: why the fork Yes or No?

Fork response modalities offers two paths for teachers to clearly resolve the first time by a Yes or a No, and therefore focuses on assessing 100% of fields of study.

- ⊕ **Why assess the satisfaction or dissatisfaction level?**

The assessment of the intensity of satisfaction or dissatisfaction reflects two vital aspects of teachers towards the education system namely the expectations and the involvement.

- ⊕ **Why assess the exposure frequency?**

The exposure frequency of the teachers to the variables of the organizational climate establishes a considerable importance as far as minor effects perceived by the teachers but with high frequencies produce important cumulative effects which turn out fatal in the time just like of the major or critical effects and consequently create deviations in terms of mission and objective.

At the end of this combined evaluation, and for every question we can collect 2 numerical values relative to the intensity and to the frequency what favors a good quantification of the impact of the perceptions of the variables of the organizational climate on the targeted population, thus defining the concept of feed-back downstream to the system.

#### 4. Conclusion

At the end of this second part, governed by the quality concepts and rummaging the macro process of education and training, strategy risk analysis allowed us to identify all the variables of organizational climate and develop a powerful working tool: the questionnaire that the engineering design is inspired by:

- International Standards of Quality and Auditing as ISO 9000 family and BRC Global Standard for Food Safety;
- Quality concepts as the method of 5M and bi-factorial matrix for risk assessment from the variables by combining the intensity and frequency of satisfaction.

335 variables that make up the questionnaire define the sphere of teachers' perception and they are spread over nine clauses while respecting organizational priorities.

Assessing the impact of organizational climate is based on the collection of personal perceptions of teachers towards various organizational situations, thus defining the concept of feedback downstream.

Such assessment is measured by means of two factors combined namely:

- The intensity of satisfaction or dissatisfaction;
- The frequency of exposure.

If the first factor is used to collect feedback unidimensional of a given situation, the second allows to showcase and to root the impact of the time factor in the perception of organizational climate variables.

The questionnaire is administered to middle and high schools, and an interval of three weeks we have salvaged 200 which 181 were deemed usable, and the results will be used to determine the relationship between psychosocial indicators developed in the next publication.

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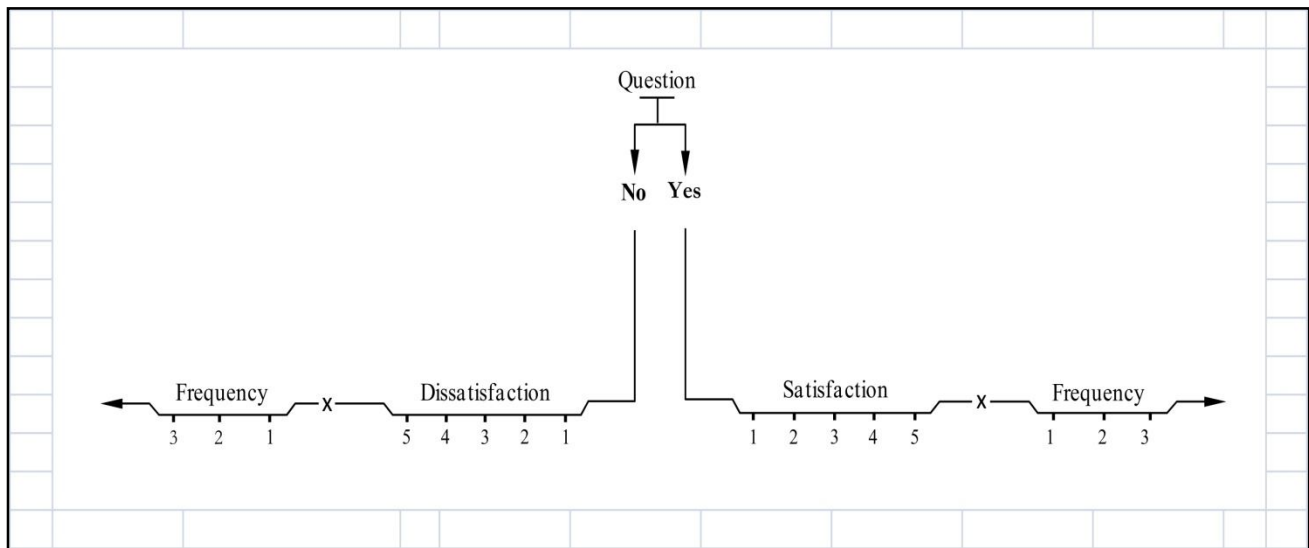
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List of tables and figures in order of appearance:

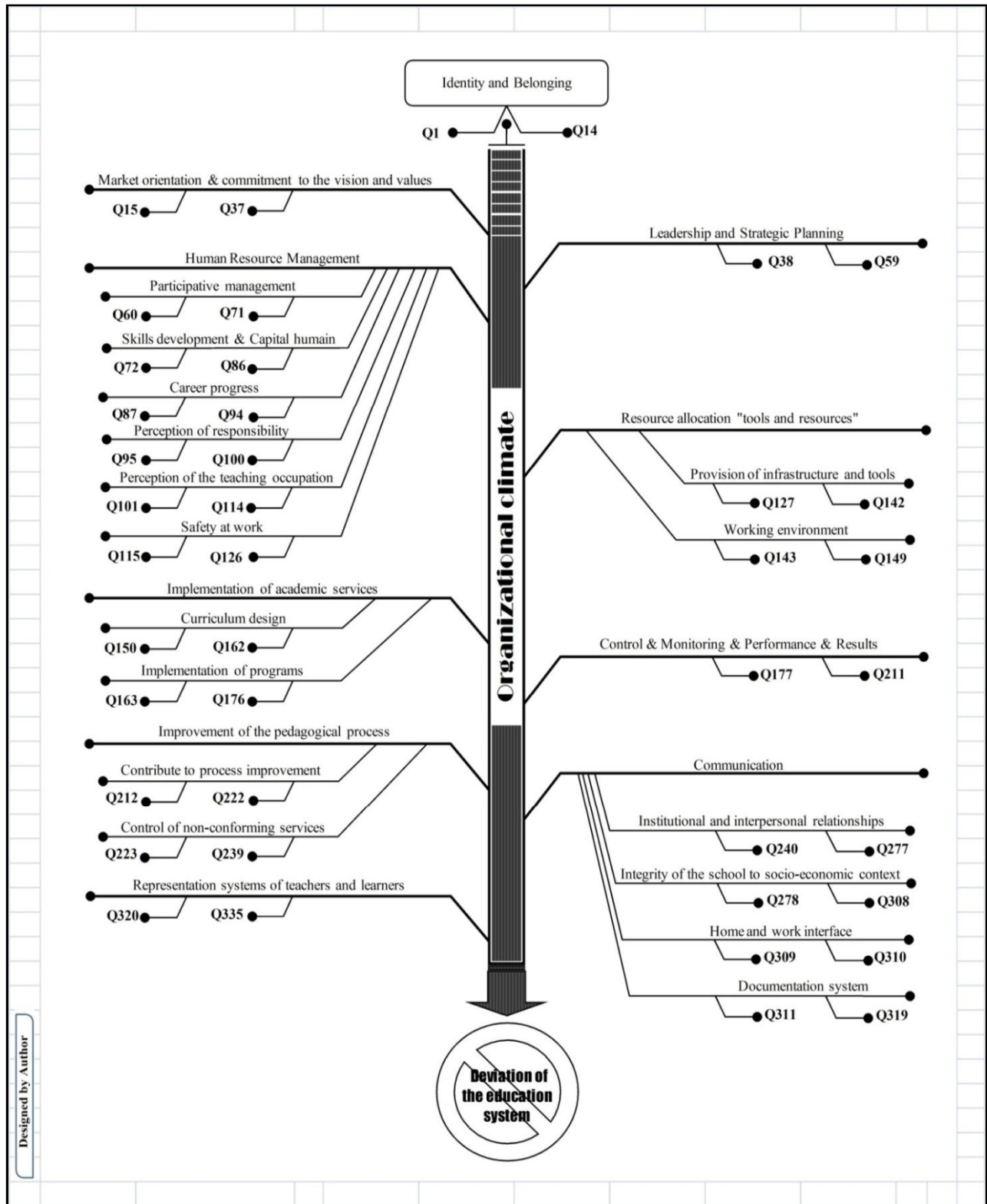
Table 1: Variable type of organizational climate

Variable type	Emitting source	Example
Causal	Authorities of education and training HAET & RAET	Style of leadership; Educational policy; Target.....
Intermediate	Schools	Attitudes; Motivation; Communication; Decision making ...
Final	Teachers	Absenteeism rate; Rate of complaints; Quality of academic services

Poster 1: Answers sequence



Poster 2: Analogy between Ishikawa diagram and clauses of organizational climate



Note: For a complete copy of the questionnaire please contact the email address of the correspondent author.



Table 2: Analogy between PDCA and clauses of the questionnaire

Phase	Clauses includes
PLAN	I. Market orientation, commitment to the vision and values;
	II. Leadership and strategic planning;
	III. Human Resource Management;
DO	IV. Assignment of "tools and resources" resources area of school life;
	V. Implementation of academic services;
CHECK	VI. Control & Monitoring & Results & Performance;
	VII. Improvement of the pedagogical process;
ACT	VIII. Communication;
	IX. Representational systems for teachers and learners.

Table 3: Organizational levels and main chapters of ISO 9001 version 2008

Principle of the standard	Target organizational level			
	Mission profile -Teacher-	Middle schools & High schools	RAET	HAET
<b>Management system quality</b> <i>Process approach, general requirements, documentation.</i>	-	-	X	X
<b>Management's Responsibility*</b> <i>Responsibility, authority and communication, quality policy, quality objectives, management review.</i>	-	X	X	X
<b>Resource Management*</b> <i>human resources, infrastructure, work environment.</i>	-	X	X	X
<b>Realization of service</b> <i>Planning, customer process, purchasing, production, measurement equipment.</i>	X	X	X	X
<b>Measurement, analysis and improvement</b> <i>Controls, non-conforming product, internal audit, corrective action. **</i>	X	X	X	X

Table 4: Assessment model of variables

Situations or aspects of organizational climate likely to be a risk or well-being factor	If Yes Assess your level of satisfaction ☺	If Not Assess your level of dissatisfaction ☹	How many times have you experienced or thought of such a situation?
<p style="text-align: center;"><b>Q<sub>28</sub>:</b></p> <p>Does your job allow you to make decisions independently?</p>	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3