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CONCEPTIONS RELATING TO FOOD EDUCATION IN THE MOROCCAN TEXTBOOKS: WHAT MODELS OF HEALTH?

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ABSTRACT: *Food education is a component of health education which plays an important role in the development of citizenship and human resources of a country. Food is present in our daily life and in our curricula. Textbooks are one of the main components in implementing a curriculum and an important step in the didactic transposition. The textbooks editors's beliefs and values have a direct influence on this transposition. In this framework, we are interested to identify the food education conceptions used in Moroccan school textbooks. Methods: The corpus of this study was composed of 7 text-books. We chose as a tool of investigation a grid elaborated in a common work with all the research teams in the European project Biohead-Citezen. Results: The Health Promotion conception is adopted in the images and the texts in the primary and middle school. Food education is absent in the high school. It is illustrated, mostly by its "Health" conception and rarely by the "Environmental" conception. But we also find the Biomedical Model approach that is represented especially by "Pathology" conception. Discussion: Our results match with those found in the studies interested in health education carried out in the framework of European project Biohead –Citizen. An effective Food Education could produce changes in knowledge, attitudes and beliefs, it's could facilitate the acquisition of skills, and produce changes in behavior or lifestyles. Is it really contributed to these changes? It remains to verify the changes in students.*

KEYWORDS: Food Education, Conception, Didactic transposition, Health promotion, Biomedical approach.

INTRODUCTION

Background

Food education is a component of health education which plays an important role in the development of citizenship and human resources of a country (Jourdan, 2010). Food Education is seriously taken into account by the international education systems, as it is subject to numerous studies and programs fund-raised by international public organisations' including the World Health Organisation (WHO) and Food Aid Organisation (FAO).This is evidence that food is an essential condition for the physical, mental and psychoaffective growth of the child and the adult. It serves as a major determinant for health and a key factor to a country's development (Moroccan Ministry of Health, 2011).

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In Morocco, foodstuffs take a major place among the vital concerns of the citizens; that is clearly apparent in the outcomes of the investigation undertaken by the High Commissioner of Plans (Statistics Division) in order to determine the consumer price index, all along the years 2007 and 2013. The study reveals that foodstuffs (as well as alcohol-free drinks) make the first priority among other products Moroccans consume and throughout the years of the study there has been a dramatic increase in the consumption of these products (HCP, 2015).

In relation to all developing countries Morocco is undergoing consequences of the deviation from the Mediterranean diet model. In this context, there have been profound and rapid changes in the Moroccan nutrition patterns as a result of the growth of food production industry, and the role of the media in encouraging the consumption of products generating obesity and other metabolic disorders, as well as setting up a nutrition transition. This transition is characterized by the coexistence within the same social segments, even within the same family, of various diseases including obesity among adults and malnutrition of young children (Moroccan Ministry of Health, 2011).

By dint of these changes, challenges relating to the education of young people, the future generation, are increasingly demanding. To convey the best necessary training to all young people, against the backdrop of a complex and changing social environment requires a constant and continuous readjustment of practices; from this stand point emerges the indispensible/crucial role of school that is actively involved in adopting certain positive behaviors and abandoning other risky practices (and harmful habits) for young people.

School is a vital element in implementing some positive behavior and making students drop out other dangerous behaviors. Today educating students to healthy nutrition allows them to develop the abilities to act, choose, decide on an autonomous and responsible manner and capacity face reality and deal with conflict (Jourdan, 2010).

Food is indeed present in our daily life and in our curricula. However, in what way is nutrition tackled in our school programs and textbooks. Textbooks are one of the main components in implementing a curriculum and therefore an important step in the process of transpositing teaching materials (Jonnaert, 2009).

School textbook and KVP model:

The choice of subject matters presented in textbooks is made with regard to curricula and pedagogical guidelines, for this reason, textbooks editors are considered main "actors" in the process of the didactic transposition, as they operate on the one hand a selection of objects of knowledge, and, on the other hand, a textualisation (Grosbois et al, 1991).

The conceptions of the textbooks' authors and publishers could influence the transposition of this knowledge by his own conceptions, values and practices (Clément, 2004) (Figure1).

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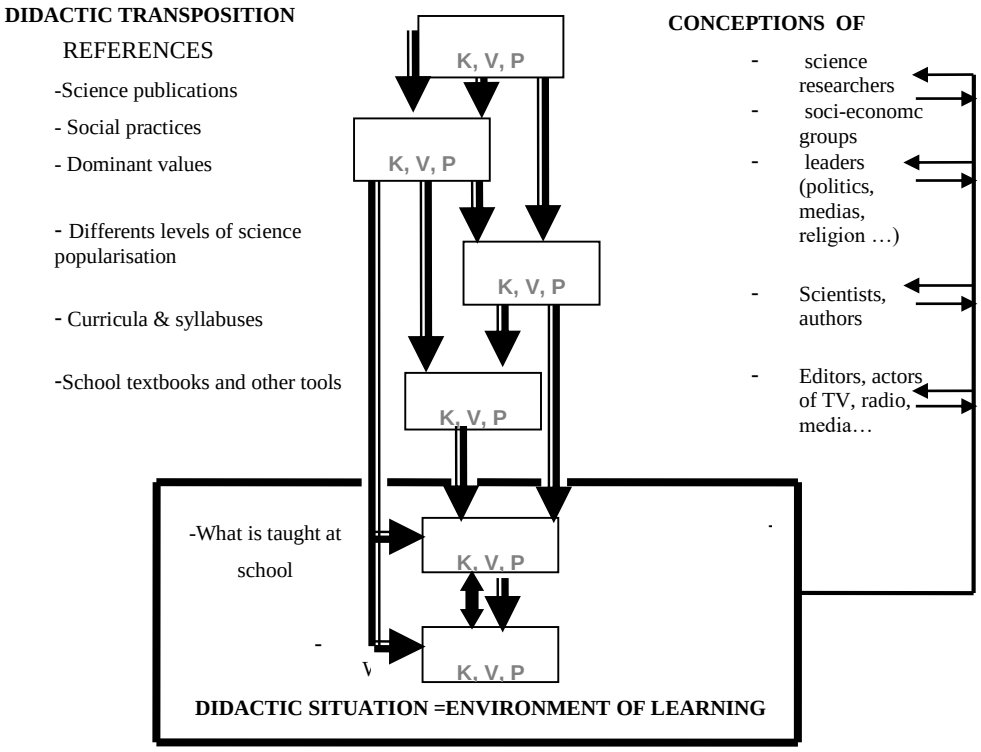

Figure 1. Schema of the didactic transposition, linked to the analysis of the conceptions of the main actors of the transposition (Modified from Clément 2006).

The textbooks editors's beliefs and values have a direct influence on the the didactic transposition, on the way of understanding and teaching a topic: the teaching practice. These beliefs must be taken into account in the contents and strategies of defining curricula.

According to the model KVP proposed by clement (2004; 2006), any conception can be analysed as interaction between 3 poles: scientific knowledge (K), values (V) in a very broad sense (opinions, convictions, social representation, beliefs, ideologies), and social practices (P) professional, family's, or citizen (Figure 2).

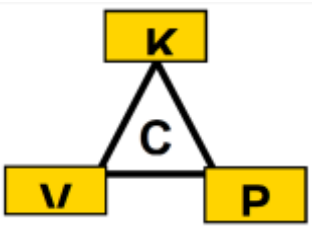

Figure 2. The KVP Model: Conceptions (C) can be analyzed as interaction between scientific Knowledge (K) Values (V) and social Practices (P) (Clément, 2004; 2006).

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Model of Heath

In history, the health education approaches have evolved from the precautionary approach to a health promotion strategy.

Classically, Health Education was been based in the Biomedical Model (BM), model which focused explicitly on disease and on their causes, treatment, and prevention, in a reductionist cause-effect perspective, with information about health problems, ways to handle and cure them, and how to avoid them, by means of persuasion by teachers and/or health professionals (Leininger,1984). The aim of school health education under the biomedical model, then, is to teach children and young people how to keep their bodies in good physical condition and how to avoid disease.

Currently, the «health promotion» approach (formalized in 1986 by the first International Conference for the Promotion of health, Ottawa, 1986) is defined as «the process that confers on the populations the means of ensuring a greater control over their own health and to improve it». Among the strategies outlined in the Ottawa Charter for health promotion (1986), there is the approach on the environments or living environments (settings), centered on health and not on disease. The importance is given to the style of life. Individuals and populations are responsible for caring for and promoting their health. The Health Promotion is also the maintenance and improvement of "good health" by a participatory approach to education for health, where young people are put in a decision-makers' situation, or codecision-makers with professionals, both for the identification of issues and subjects of health to treat than for the choice of methods and means.

So for each model of health, there are indicators that characterize it in support or speeches to educational range that use them:

- indicators for the biomedical conception of health: pathological (Pa), curative (Cu) and preventive (Pr);
    - Pathological concepts which aim diseases, including their causes (aetiology) and their mechanisms (pathogenesis).
    - Curative concepts that are in relation with cure treatment of a disease (medicine, remedy). In relation to all that is being implemented to prevent a trouble, an illness and to get cure.
    - Preventive Concepts are related to all measures to avoid or reduce the number and severity of illness, accident and disability.
- Indicators for the conceptions of the Health Promotion: Healthy (He), Empowerment (Ep) and environmental (Ev) concepts.
    - Healthy conceptions that expresses the Health Promotion (health gain, healthy lifestyle, healthy body...) in its physical, mental, social and spiritual dimensions.
    - Empowerment conceptions that express the development of personal skills and that people be informed about healthy choices or decisions and beings warned against the harmful health factors.

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- Environmental conceptions describe the physical, social, environmental conditions and the quality of life.

In this framework, we are interested to identify the food education conceptions used in Moroccan school textbooks and programs by asking the following questions:

- What conceptions are adopted by the textbooks dealing with Education to food?

- Do these models correspond to those related to health promotion?

METHODS

The aim of the present study was to the emphases on either model (Biomedical model or Health Promotion) given by Moroccans textbooks on the topic of Food Education.

The analyzed corpus

The corpus of this study was composed of 7 text-books selected according to their contents that are implicitly or explicitly relating to food education (FE). We chose to analyze an example of each school level among the various school bocks accredited for 3 level of education (primary, middle and high school).

The distribution of this corpus is represented in the following table:

Table 1. Heading of the chapters containing the concepts of the EA in the analyzed textbooks.

Textbooks	Level of study	Years of students	Heading of the chapters containing the concepts of the EA
Al Fadae	First year of primary school (1PS)	6-7 years	Food
Al Mokhtar	Second year of primary school (2 PS)	7-8 years	Digestion
Al Manhal	Third year of primary school (3 PS)	8-9 years	Food
Al Morchid	Fourth year of primary school (4 PS)	9-10 years	Food
Al Mofid	First year of middle school (1 MS)	12-13 years	Food
Fi Rihab	Third year of middle school (3 MS)	15-16 years	Food Education
Al Wadih	Third year of middle school (3 MS)	15- 16 years	Food Education

In the analysis of these textbooks we were interested in parts devoted to the notions and concepts of EA. The program of Life and Earth Sciences of high school does not treat concepts

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in relation to FE, hence the absence of text-books corresponding to this level in in our analysis corpus.

All the school textbooks of the primary education as well as the school book of the 1st year college do not present FE as being a separately element of the other concepts. The notions of FE are implicitly included in chapters dealing with ecological and digestive concepts. Unlike these textbooks, those in the 3rd year of college FE is in a distinct chapter included in the unity of the Health Education (HE).

Data Collection Instrument

We chose as a tool of investigation a grid elaborated in a common work with all the research teams in the European project Biohead-Citezen "Biology, Health and Environmental Education for better Citizenship" (Carvalho et al., 2004)1. The project involved nineteen countries including Morocco. The grids were developed, discussed collectively and then tested in each country, and then improved based on these tests. The grids we used include a certain number of criteria and indicators which make it possible to characterize the model health used in the text and images referred to above.

The grid question used in the present work was as follows (Table 2):

Table 2.

		Biomedical (BM) conception				Health Promotion (HP) conception			
Total analyzed phrases		Pa n (%)	Cu n (%)	Pr n (%)	Total BM (Pa+Cu+Pr) N (%)	He n (%)	Ep n (%)	Ev n (%)	Total HP (He+Ep+Ev) N (%)
Number and % of phrases	N (100%)								

Biomedical (BM) vs Health Promotion (HP)

Using the precedent table, for each sentence, classify it as: Pa – Pathologic; Cu – Curative; Pr – Preventive; He – Healthy; Ep – Empowerment; Ev – Environmental.

Explicit messages – when some key-words are present: disease names, infections, etc. (Biomedical conception) vs healthy choices, lifestyles, empowerment, etc. (Health Promotion conception).

A similar question was asked for images.

RESULTS

We are going to present the results of text and image analysis.

[1] BIOHEAD-CITIZEN. Biology, health and environmental education for better Citizenship. CITC-CT-2004-506015. (2004-2008). Project Coordinator : Graça S. Carvalho , Pierre Clément, Franz Bogner.

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Text Analysis

In each of this study textbook, we looked expressions or ideas phrases or ideas which are more associated with the biomedical model or whit the health promotion model. The results are presented in figure below.

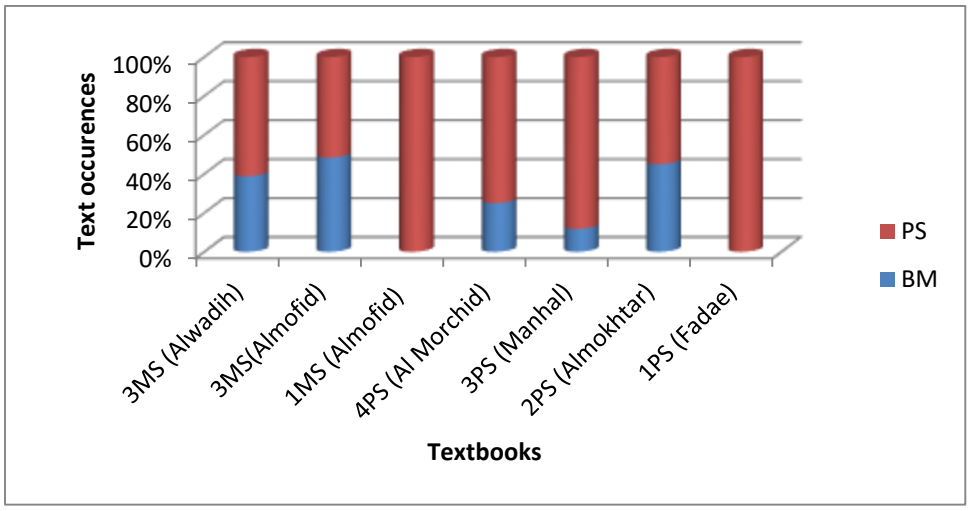

Figure 3. Proportion of Biomedical model (BM) and Health Promotion (HP) in text.

The results herein presented show that the primary textbooks were especially rich in sentences within the HP approach (Fig 3). The percentage of texts relating to this approach is 100% in the textbook for the first primary year and first year of middle school and it is 55%, 88% and 75% respectively for the textbooks of the second, the third and the fourth year.

As is the case of primary textbooks, the HP approach is the most plentiful in textbooks of the middle school. This abundance is the highest in the textbooks of the 1st year (100% HP). But the appearance of the text associated to the BM approach in the textbooks of 3rd reduced this percentage to 61.18% and it reaches 50.78%.

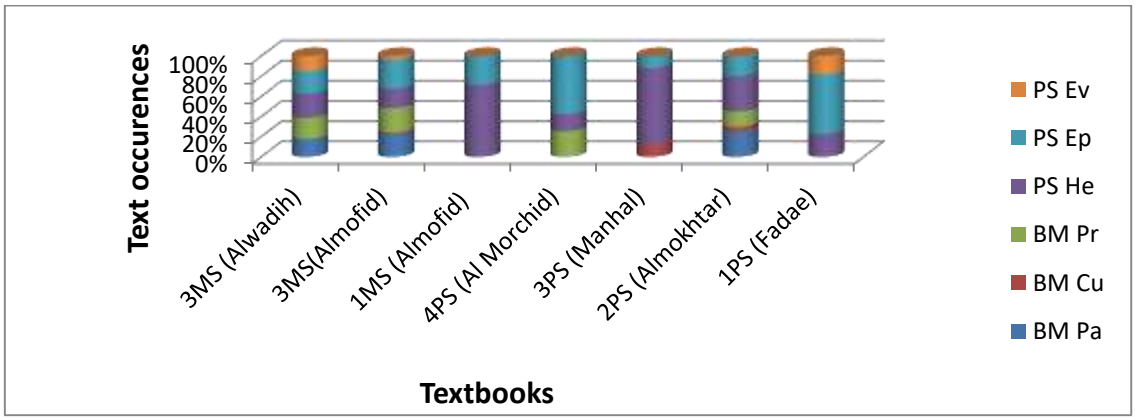

Figure 4. Proportion of various concepts characterizing each model (BM and HP) in text.

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The HP model is featured in school especially by its concepts “Health” and “Empowerment”, as we noted the absence of the “environmental” notions in the school books of 2nd, 3rd and 4th year. As for BM approach, it is presented by its two conceptions “Curative” and “Preventive”, seldom “Pathological”. The school textbooks of the 1st year of each level (Primary and middle school) is marked by the absolute predominance of the HP approach, by its conceptions “Health” and “Empowerment”, but in upper levels, this predominance is limited by the presence of texts associated with BM approach.

These are examples of sentences according to the various models:

Pa

- The absence of an essential component in food generates diseases of malnutrition.

- The syndromes of Kwashiorkor: oedemas of the members and the face, dry and breakable hair and reducing the mass of the muscle tissue.

Cu

- To treat dehydration, the doctor advises to drink water added with rock salt.

Pr

- Water and rock salt can be considered protective food.

- Foods that are rich in vitamins protect from diseases.

He

- What are the impacts of malnutrition on health?

- Vitamin A is an important nutrient for health.

Ep

- The various daily activities require a suffisant contribution of various nutritive elements in order to meet the energy needs.

- The teenager needs a certain quantity of nutritive food to meet his body needs.

EV

- The quantities of power consumption per hour vary according to the activities (walk, collective games, sleep, sitting…).

- When does one eat ? Morning, after midday andevening

Analysis of the images

The analysis of the images is more complex in so far as they present a polysemous aspect making sometimes their interpretation subjective (Semprini, 1996).Their contents are never randomly selected but reflect a subjacent conception.

The results are presented in the following figures:

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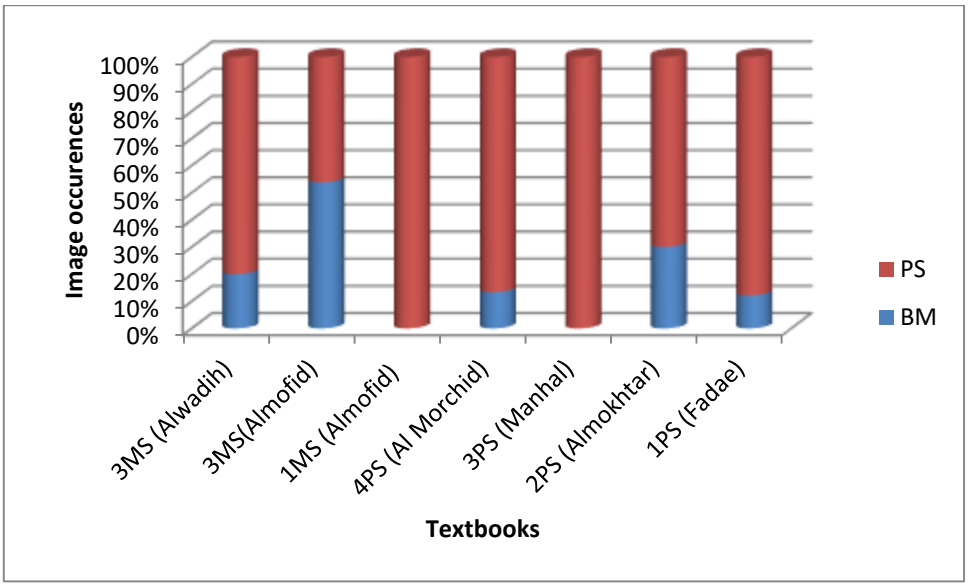

Figure 5. Percentage of images relating each health model (BM and HP) in the textbooks

As the case of the text, the majority of images relating FE present the HP approach except the textbook of 3rd year who has transgressed to the biomedical approach with 53.7% against 46.12 % in the HP (dominance of BM).

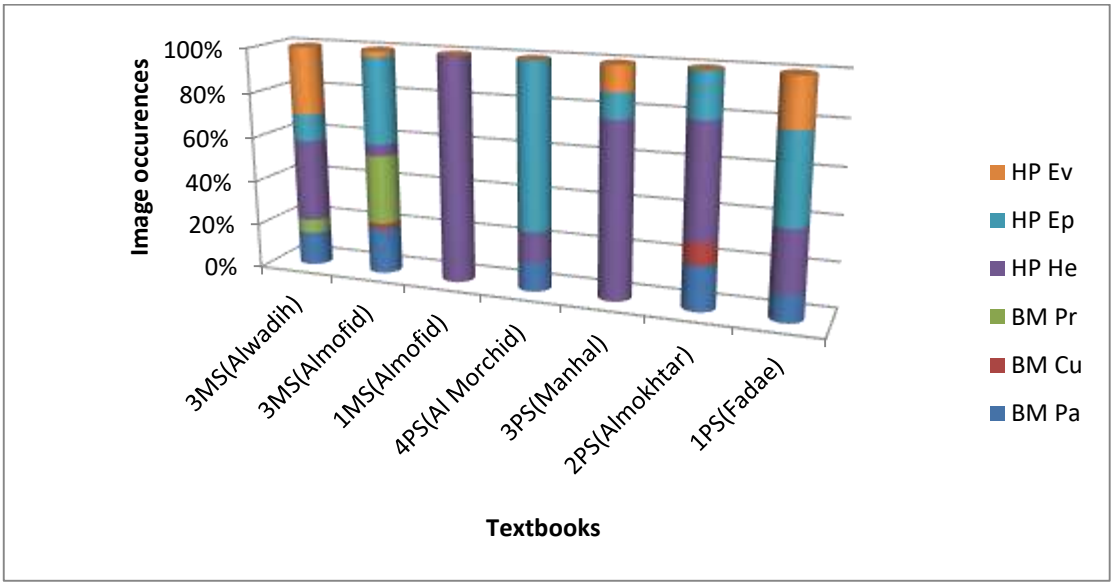

Figure 6: Proportion of various concepts characterizing each model (BM and HP) in image.

The majority of images relating to FE presents the HP approach is illustrated by the "Empowrment" and "Health" conception (rarely by the "Environmental" conception), while the BM approach is illustrated especially by the "Pathology" conception (rarely "Health" or "Prevention" conception).

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These are examples of images according to the various models:

Factors of changes in energy expenditure (Environmental)

Energy foods, functional foods and foods construction (Empowerment)

What saves me good health (Healthy)

Figure 7. Examples of images presenting the HP model

kwashiorkor slump

Rickets

Goitre

Figure 8. Examples of images presenting the BM model (Pathologic)

DISCUSSION

All the primary textbooks and the textbook for the 1st year of middle school does not have treated the FE as a separately part of other notions, but the concepts of FE are implicitly included in the chapters dealing with ecological and digestive concepts and notions. It's just treated separately in the 3rd year of middle school. The HP conception is adopted in the images and the texts in the primary and middle school. Food education is absent in the high school.

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The Important topics related to FE as food poisoning, food additives or food prevention is not treated.

As shown in the corpus studied, FE is only presented in the primary and middle school, and is limited to topics that are repeated and not developed throughout the curriculum. However, according to health education professionals, topics related to health education should be addressed in class in a kind of spiraling into account the acquisition of knowledge and the growing maturity of learners (Jourdan, 2004; Quoted by Odile, 2011). So we can qualify the absence of the FE in some primary and middle levels and total absence in higher level by a discontinuity in the curriculum. This discontinuity causes gaps in health knowledge, which would impede the changing risk behaviors and decision making about health food (Whitehead & Russell, 2004; Quoted by Odile, 2011). It is therefore important to make adjustments in the distribution of topics relating to the FE takes into account the continuity and diversity of these subjects teaching, to reduce the gap between the content of the Moroccan curriculum Life and Earth Sciences (the case of middle and high school) or for scientific activity (primary school) and international recommendations.

Our results match with those found in the studies interested in health education carried out in the framework of European project Biohead –Citizen (project involves nineteen countries including Morocco). The Moroccan primary textbooks adopt the HP approach and in the other levels adopt the BM approach (Selmaoui and al., 2007a; Selmaoui et al., 2007b; Selmaoui et al., 2007c, Selmaoui et al., 2009). In a comparative analysis of the biology textbooks from 3 Mediterranean countries: Morocco, Lebanon, and France (Khzami et al, 2010) and a comparative analysis of textbooks from 16 countries (Carvalho et al., 2007; Carvalho et al., 2008) show that the approach most dominant in the Moroccan textbooks is the HP.

CONCLUSION

The aim of present study is the analysis of texts and images relating to the EA in the Moroccan textbooks. It has allowed identifying that the HP approach predominates. It is illustrated, mostly by its "Health" conception (He) and rarely by the "Environmental" conception (Ev), but we also find the BM approach that is not represented especially its conception "Pathology" (Pa). Themes related to the FE must be present throughout the curriculum of students; especially our food has become industrial and dangerous. The reality is that our foods are not worth those consuming our grandparents to our age. For proof, 80% of the food we eat every day has undergone an industrial process before reaching our plates (Dangers alimentaires, 2015).

At school, the health education generally involves informing learners to become aware of the dangers of life styles or behaviors: poor eating habits, but it should also promote students' skills to develop attitudes and healthy behaviors (Carvalho et al., 2004, Fayard, 2005). The development of the students' responsibility to their behavior is defined by the WHO (1986) in the Ottawa Charter for Health Promotion is "the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment". The strictly preventive approach in the FE field limit the risks concerns: the behavior considered negative, and their dangers, and can

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be interpreted as a ban instrument of social control and the "normalization". Food Education cannot be summarized in a list of prohibitions.

Food Education in schools should help to the progressive acquisition of knowledge and skills and make able students responsible to informed choices in food. FE helps them to adopt behaviors that protect their health and improve their lifestyle. An effective FE could produce changes in knowledge, understanding or ways of thinking; which may influence or clarify values, it's could determine changes in attitudes and beliefs; facilitate the acquisition of skills, and finally could produce changes in behavior or lifestyles. Is it really contributed to these changes? It remains to verify the changes in students.

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