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New Orientations in Gastronomy Education: Molecular Gastronomy

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Abstract

Gastronomy has very big importance around the world, as well as in Turkey and referred to as a branch of science. Diet of Country, kitchen culture, and food and beverage production contains many factors such as different kinds of gastronomic sciences. Correlated with a positive correlation between the levels of development of the countries that have been revealed in many scientific research results. Indeed, the younger generation of gastronomy effectively receives training in quantitative and qualitative terms, in the society they live more productive and healthy individuals may contribute to their survival. Development of the science of Gastronomy, food production has led to increase the variety and quantity. The increase in food and beverage production and diversification of has led commercial value to the science of gastronomy. This is the most important factor in providing commercial value of the industrial revolution with the development of individuals as a result of rising disposable income and leisure time is the phenomenon of eating outside their homes. The development of this phenomenon, food and beverage businesses to operate, as a commercial enterprise by triggering element gastronomy has become a major industry. The development of this industry, the aim of diversifying products has begun to develop new directions. Today, however, the most important current orientations of businesses developed as it is called molecular gastronomy. Including literature and theoretical research work consists of two parts. In Turkey, this study of education in gastronomy that molecular gastronomy application aims to determine of the current location. For this purpose, in Turkey in the field of gastronomy graduate-level training programs were examined in the application of molecular gastronomy. As a result of research in Turkey at the undergraduate level programs that provide training in gastronomy molecular gastronomy applications as qualitative and quantitative results that cannot reach the desired level is reached. This basic result in the context education applications of molecular gastronomy in Turkey recommendations for developing a strategic plan was developed.

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1. Introduction

In our age of technological developments, industrialization and urbanization revealed a number of social changes are observed. In parallel to this change in our traditional culinary culture and eating habits, there are changes (Youssef, 2013; This, 2011). These changes have been reflected in taste and presentation techniques and applications in gastronomy has revealed new kitchen. In addition to the definition of Gastronomy, physical and chemical sciences, which emerged as a result of joint work with the molecular gastronomy movement is spreading rapidly around the world increasingly (Vega and Ubbink, 2008). The most important feature of this new culinary through the use of technology to play with the molecular structure of the material and come together at the same time will not be considered to provide the material together (Blanck, 2007).

Molecular Gastronomy; meal or food, cooking examining the physical and chemical changes occurring immediately and is explaining science. Science, art and creativity come together in molecular gastronomy, the food to the service suffered in its raw form is interested in chemical and physical change. Molecular gastronomy, while eating an emerging scientific discipline examining physical and chemical processes (Cazor and Lienard, 2011; This, 2005). The short description of molecular gastronomy, in the preparation any meal of can be explained as benefiting from chemistry and physics. Molecular gastronomy during cooking the meal, until the end of the beginning is understood the changes facts behind physical and chemical that occur in each stage of the scientific (Mielby and Fost, 2010). The materials used in making meals examines the mechanisms behind the transformation, tries to explain them, and in general (scientific perspective) cuisine and gastronomy cases, social, artistic and technical content is investigating. Food without changing too much of the main structure, taste and in the tissue of different things can be expressed by capturing submission. (Youssef, 2013; Linden and others, 2008).

Science subjects in the kitchen, of course, the food industry is very interested in the issue. However, the focal point of their cuisine through the science to improve the cost-effectiveness of products, cheaper investigate the possibilities of using alternative materials and to extend the shelf life of food products. (Edwards-Stuart, 2012). This issues kitchen chemistry and physics for decades is significant has progress. But these issues are not the purpose of molecular gastronomy (Miller and others, 2010; This, 2009). Molecular gastronomy built on top of traditional cuisine in a way, a different way of cooking Taklas also be able to cook better, healthier and more attractive to provide meals are among the objectives of this school. Molecular gastronomy and only the flavor enhancer is the pursuit of new scientific discoveries and creativity (Valverde et al., 2011).

How recover instead of taste function of the brain and the subject of how will be much pleasure a meal with this knowledge, is the subject of molecular gastronomy. (This and Rutledge, 2009). Brief; Defined as the science to improve the flavor. Molecular facilities are examples can applications seabed extracted from seaweed rocks boiling food for use in food unusually temperatures to be served, grapefruit with caviar derived sauce sodium alginate and calcium chloride and flavor increasing and differentiation. (Sanchez, 2014; Cousins, 2010).

1.1. Present Status of Education of Gastronomy in Turkey and Molecular Gastronomy

Primary goal is, of the individual, family and society's to be healthy and productive. Symbol of a healthy and be productive, physical, mental, spiritual and social aspects of a well-developed body structure and intact structure this is maintained (Güven, 2005). At all stages of life possible from the physical and mental aspects of healthcare and continues to be healthy with adequate and balanced diet (Tanır et al., 2001). These conditions ensure countries educational systems, gastronomy education will be realized with the development of qualitatively and quantitatively focusing. (Harrington et al., 2008; Ruetzler and Taylor, 2009).

The most important in the world of Turkish Cuisine and food and beverage cultural richness, especially when considered in terms of variety of cuisines are among. (Karaosmanoğlu, 2007; Aktaş, 2001; Sarıoğlan, 2007). However, that is can be expressed the rate of population in education in Turkey gastronomy and gastronomic education situation in other countries is analyzed qualitatively and quantitatively focusing lagging behind. (Hegarty, 2011; Zahari et al., 2009; Aymankuy & Sarıoğlan, 2007; Harrington et al., 2005; Stitt, 1996). Particularly can be said today. In the gastronomy sector provides an important position of the Turkish economy in line with the fact that gastronomy cannot reach the desired level of education.

Gastronomy Education in Turkey, are given in two distinct school level. Including secondary and higher education. At the secondary level operates under Anatolian Hotel Management and Tourism Vocational High School and Vocational School for Girls within the food and beverage and kitchen. Students in secondary provided

gastronomy education gastronomy training are the number of approximately 356 programs, nearly 27,600. (Ministry of National Education General Directorate of Commerce and Tourism Education-2013 Data).

Gastronomy training at higher education level gastronomy at the associate degree and undergraduate level education is given. At the undergraduate level, Gastronomy and Culinary Arts and Food & Beverage Management departments, 28 graduate-level educations is given in the section about 1,690 students. In the associate degree level training is given of approximately 3370 students in 46 sections gastronomy culinary. (2013 Higher Education Institution of Student Selection & Placement Guide).

In line with these data is the current state of education in Turkey available gastronomy is quite inadequate as a quantitative can be confirmation. In Turkey, quantitatively, qualitatively it is difficult to able to express that enough besides being insufficient gastronomy education. Indeed, the instructors teaching training and a large portion of the faculty members did not receive sufficient that we are faced with. Training gastronomy and gastronomic training is laboratory equipment needed for insufficient to conclude. These data are in accordance with training courses in Turkey, gastronomy molecular gastronomy education is very difficult to provide effectively. Indeed, the application of molecular gastronomy and research needed to be effected facilities cannot be provided within existing gastronomy training was concluded.

2. Method

In Turkey gastronomy of education, secondary education and higher education, including two basic levels are given. Illustration, effective implementation of accessibility and high school level education in the field of education of gastronomy in the lack of scientific studies, the application area of study at higher education level education of gastronomy has led to the students.

In this study, higher education in Turkey education of gastronomy at the undergraduate level, only three of the 28 programs are provided in the course of molecular gastronomy. In the research 34 students who had taken courses in 3 different programs with a semi-structured interview has tried to be measured with the theoretical and practical information about molecular gastronomy.

3. Findings

In the research constituted within semi-structured interviews with the students their views in the form of has tried to measure molecular gastronomy. Semi-structured interview form is composed of 3 separate questions. Interviews were carried out with toning. To the students the same questions, the same words and the same semantic orienting. In the interview process, students was transferred to the paper do not want to talk, directly to determine the cassette they talk. Then, combining data of the study created all the texts. Qualitative data analysis techniques were used in the analysis of verbal data obtained.

Table 1. What is molecular gastronomy mean to you?

What is molecular gastronomy mean to you?	Frequency
Fact of acquisition new taste of with the use of the physics and chemistry sciences.	3
Make experiments in the kitchen	11
In terms of sector, is an unrealistic approach	4
Is An Innovative Approach	9
I cannot explaining the relationship of physical and chemistry Experiments in the kitchen.	7

The first question directed to the research group ” what is Molecular Gastronomy mean to you?” The aim of this question to the research group directed by the phenomenon of students' perceptions formed in molecular gastronomy are to measure the information. In accordance with the data presented in Table-I fully characterize the term molecular gastronomy, are very few students.

Table 2. Did you experience implementing of molecular gastronomy lessons in constraint application?

Did you experience implementing of molecular gastronomy lessons in constraint applications?	Frequency
Course instructor was not haven comprehensive knowledge of the subject	6
Insufficiency terms of physics and chemistry	10
At the time of applications was not enough laboratory facilities	13
At the time of applications was not enough consumable supplies	5

The second question directed to the research group'' did you experience Implementing of Molecular Gastronomy Lessons in Constraint Applications?'' The aim of this question to the research group directed molecular gastronomy students lived within the course students learn the level of external and internal environmental factors that what extent affect the to measure. In accordance with the data presented in Table 2 of molecular gastronomy is determined not handled effectively. The most important reason as insufficiency of laboratory facilities and supplies, course instructor qualitative elements were the result of external environmental factors of the desired level as in the absence.

Table 3. Molecular Gastronomy Lesson What's the way Support Fusion Cuisine Applications?

Molecular gastronomy lessons what are the way support fusion cuisine applications?	Frequency
Rather than kitchen ability improves physics and chemistry capabilities	15
Innovative approach improves capabilities in the kitchen	6
Does not support. application capability constraints in the kitchen	7
Not relevant in the kitchen with application capabilities	6

The third question directed to the research group'' Molecular Gastronomy Lesson What's The way Support Fusion Cuisine Applications?'' The aim of the research group directed to this question of the students of the course students of molecular gastronomy cuisine applications that contribute to what extent to the ability to measure. In accordance with the data presented in Table 3 of molecular gastronomy cuisine students the ability to practice the desired sizes not contribute are determined.

4. Results and Suggestions

In this research, graduate-level education in the field of gastronomy students to gauge their level of knowledge about molecular gastronomy, molecular gastronomy has asked questions about. Students about molecular gastronomy in his answers to the questions were quite inadequate. In this context, higher education institutions at the undergraduate level gastronomy offering education in schools, molecular gastronomy courses and course contents Turkish cuisine, culture and food and beverage needs of industry where developments can meet the qualitative meet the conclusion that has been reached.

Institutions of higher education courses in schools providing education at the undergraduate level gastronomy and of course contents, Turkish cuisine, culture and food and beverage needs of industry in order to meet the development applications should be created for students.

Institutions of higher education in schools providing education at the undergraduate level gastronomy, the application of the qualitative and quantitative improvement of the laboratory is required.

Institutions of higher education in schools providing education at the undergraduate level gastronomy, food and beverage industry in terms of knowledge and skills needed to be strengthened with practice lessons.

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