International Journal on New Trends in Education and Their Implications
July 2014 Volume: 5 Issue: 3 Article: 07 ISSN 1309-6249

FUSION CUISINE EDUCATION AND ITS RELATION WITH MOLECULAR GASTRONOMY EDUCATION (COMPARATIVE COURSE CONTENT ANALYSIS)

Assist. Prof. Dr. Mehmet SARIOĞLAN
Balikesir University Tourism Faculty
Ballıkesir- TURKEY

ABSTRACT

The development of gastronomy science caused an increase in the diversification and amount of food-beverage production. Increased and diversified food-beverage production provided commercial value to gastronomy. The greatest factor that provided this commercial value is the spendable income of individuals which increased with the industrial revolution and being able to eat outside their homes, due to their free time. The occurrence of this fact triggered food-beverage businesses to operate as commercial enterprises and made the element of gastronomy an important industry. The development of the industry caused new tendencies to occur with the aim of product diversification. Today, the most important movement developed by businesses is described as molecular gastronomy and fusion cuisine practices.

The conceptual relation between fusion cuisine education and molecular gastronomy course contents, the interaction between course contents and course philosophy and course contents in three different programmes of gastronomy education are examined in this study. Within this scope, it is determined that there is a conceptual confusion in defining the courses, and thus there are differences between course content and the basic philosophy of the course. This result revealed the problem of efficiently performing fusion cuisine practices and molecular gastronomy courses. Following the study, recommendations are developed in order to resolve this problem.

Key Words: Gastronomy Education, Fusion Cuisine, Molecular Gastronomy.

FUSION CUISINE AND MOLECULAR GASTRONOMY CONCEPTS

Various social changes caused by technological developments, industrialization and urbanisation are observed in our era. Parallel to these changes, there are changes in our traditional cuisine culture and feeding habits. These changes are also reflected on taste and presentation techniques and caused new cuisine practices in gastronomy to rise (Sarıoğlan, 2013; Kivela and Crotts, 2008).

In addition to the definition of gastronomy, the movement of molecular gastronomy which have risen upon collaborative studies of physics and chemistry, is spreading rapidly throughout the world. The most important feature of this new cuisine is to play with molecular structures of materials by using technology and also to gather the materials which can not be imagined to come together (Sarıoğlan, 2012; Smith and Xiao, 2011).

Fusion cuisine carries the meaning of the mix and combination of various countries' cooking techniques and ingredients to mix and combine on the same plate deliberately. Fusion means "union" (Newman, 2014). Leaving its mark on food culture in recent years, fusion cuisine can be defined as "synthesizing different food understandings of world cuisine and creating new cuisines, new foods and new tastes" (Zairi, 2011; Tomita and Secter, 2002). Fusion cuisine can be classified with three different methods. The first is the combination of the foods of close regions from different cultures. The second method, which is also called eclectic, is being a food culture determiner, yet other cuisine's techniques and materials are also used (Adlam, 2012; İsmail, 2005). The last method is to unite all world cuisines without any cuisine determiner. One of the most important features of Turkish cuisine is that all three methods can be easily used, thanks to its rich diversity of food-beverage and

culture. Based upon all these explanations, it is possible to define fusion cuisine as combining at least two different national cuisine cultures on the same plate, as a result of a deliberate effort, in order to create new, different and authentic tastes, without allowing one cuisine culture to dominate another (Can et all., 2012). Fusion cuisine practices are based upon the principle of combining two national cuisines deliberately in line with delivering new, different and authentic results. Synthesizing the processes such as cuisine material, processing and cooking techniques of different nations, combining them and delivering a food which is completely different from the foods in each cuisine, are the basis in fusion cuisine (Gioffre, et all, 2010).

Molecular Gastronomy is the science that examines and explains the physical and chemical changes of the food or nutrient that occur during cooking (This, 2013; Vega and Ubbink, 2008). Bringing science, art and creativity together, molecular gastronomy deals with the chemical and physical change the food goes through from rawness to being served (Cazor and Lienard, 2011). Molecular gastronomy is a scientific discipline that analyses the physical and chemical processes that occur during cooking (Youssef, 2013; Barham et all. 2010). In the shortest definition, molecular gastronomy can be explained as benefiting from chemistry and physics in preparing any food. Molecular gastronomy means understanding the scientific facts behind the physical and chemical changes that occur in cooking at every stage (Sanchez, 2014; Snitkjer, 2010). It analyses the mechanisms behind the transformation of the materials used in cooking, tries to explain them and studies the social, artistic and technical contents of cuisine and gastronomy phenomenons in general. It can be stated as presenting the food by catching different things in taste and texture, without changing the main structure of the food to much (Miller et all, 2010).

THE INTERACTION BETWEEN FUSION CUISINE AND MOLECULAR GASTRONOMY

The terms of fusion cuisine and molecular gastronomy are generally used instead of each other nowadays. Altough fusion cuisine means the deliberate mixing and combination of cooking techniques and contents of various countries throughout the world on the same plate, molecular gastronomy is the science that analyses and explains the physical and chemical changes of the food or nutrient that occur during cooking (Brown, 2010; Linden et all., 2008).

In consequence of these definitions, differences may rise between fusion cuisine and molecular gastronomy. Though there are differences between two disciplines, the philosophies of their emergence are similar. It can be said that developing the science of gastronomy within the framework of innovativeness approach is the basis of this philosophy (Blank, 2007; Lyer, 2006).

METHOD

Gastronomy education in Turkey is given at two basic educational levels, which are secondary education and higher education. As the accessibility of the sample is effectively realized and because of the lack of scientific studies on gastronomy education at higher education level, this study's area of application focuses on the departments that give gastronomy and food-beverage education at higher education level.

Among 28 programmes that provide gastronomy and food-beverage education at higher education level in Turkey, only 3 of them have molecular gastronomy courses and 7 of them have fusion cuisine courses. This study provides a comparative analysis of the course contents of molecular gastronomy and fusion cuisine in gastronomy and food-beverage departments (Osym Lys-2013 Guide). The content analysis is a scientific approach that provides an objective and systematic examination of verbal, written and other materials. Frequently used in social sciences, content analysis can be defined as a systematic, replicable technique where certain words of a text such as books, book sections, letters, historical documents, newspaper headlines and articles, with smaller content categories via a coding that depends upon certain rules. It is aimed to identify data and reveal facts hidden in data via content analysis. This study tries to measure the relation between fusion cuisine education and molecular gastronomy education and its level of efficiency in consequence of course content analysis (Özdaşlı and Çelikkol, 2012; Sert et all., 2012).

FINDINGS AND DISCUSSION

This study provides a comparative analysis of the course contents of molecular gastronomy and fusion cuisine, which are taught in gastronomy and food-beverage departments at undergraduate level that show activity in different regions of Turkey.

In consequence of the descriptive analysis, course contents are analysed at three different stages, whcih are practice-theoretical rates, positioning level of courses, and the level of correspondence between the course content and the basic philosophy of the course.

Practical-Theoretical Levels of Fusion Cuisine and Molecular Gastronomy Courses

Among 28 programmes that provide gastronomy and food-beverage education at higher education level in Turkey, only 3 of them have molecular gastronomy courses and 7 of them have fusion cuisine courses. In this section, the current state of these courses' styles of education is revealed as theoretical and practical.

Table 1: Practical-Theoretical Levels of Fusion Cuisine and Molecular Gastronomy Courses

Courses in Departments	T+P	Total	Courses in Departments	T+P	Total
A University	2+1	3	X University	2+1	3
B University	1+1	2	Y University	2+0	2
C University	2+0	2	Z University	2+0	2
D University	3+0	3	General Average	2+,16	2,16
E University	3+1	4	Note: Fusion cuisine course is given in universities indicated as A,B,C,D,E,F,G; molecular gastronomy course is given in departments indicated as X,Y,Z.		
F University	1+2	3			
G University	2+0	2			
General Average	2+,71	2,71	T=Theoretical P=Practice		

In consequence of the revealed data, fusion cuisine course is given for 2,71 hours weekly on average, molecular gastronomy course is given for 2,16 hours weekly on average. It is determined that the course hours of these courses are at desired level and comply with global standards. It is equivalent with the averages in the most important schools of Gasronomy at undergraduate level, such as Le Cordon Blue, The French School of Culinary Arts, International School of Culinary Arts and The Culinary Institıte of America. However, there is a negative correlation observed between the pracice and theory levels of Turkish university programmes and the theoretical and practical rates of fusion cuisine and molecular gastronomy courses given in these schools. In the light of these data, there is a need to decrease the theoretical part of fusion cuisine and molecular gastronomy courses given in Turkey at undergraduate level, and increase the part for practice.

Positioning Levels of Fusion Cuisine and Molecular Gastronomy Courses

This section of study determines in which academic term the fusion cuisine and molecular gastronomy educations in gastronomy and food-beverage departments in Turkish universities are positioned.

Table 2: Positioning Levels of Fusion Cuisine and Molecular Gastronomy Courses

Courses in Departments	Term of Course	Courses in Departments	Term of Course
A University	VIII	X University	V
B University	V	Y University	V
C University	V	Z University	VIII
D University	II		
E University	III	Note: Fusion cuisine course is given in universities indicated as A,B,C,D,E,F,G;	
F University	IV	molecular gastronomy course is given in departments indicated as X,Y,Z.	
G University	V		

When the positioning levels of fusion cuisine and molecular gastronomy courses in world's most important schools on Gastronomy at undergraduate level, such as Le Cordon Blue, The French School of Culinary Arts, International School of Culinary Arts, The Culinary Institıte of America, are examined; it is determined that the positioning is at the last two academic terms. In order to provide fusion cuisine and molecular gastronomy courses efficiently, the basic philosophy of culinary arts and practice skills should have been gained until then, which is the reason behind this positioning. However, it is concluded that in Turkish universities gastronomy and food-beverage departments focus on the fifth term and the fifth term includes efforts to redound the students with culinary arts basic philosophy and practice skills.

The Level of Correspondence Between the Course Contents of Fusion Cuisine and Moleculary Gastronomy Courses and The Basic Philosophy of the Course

This section of study tries to determine which basic points are focused in course contents of fusion cuisine and molecular gastronomy educations in gastronomy and food-beverage departments of Turkish universities. By this means, it aims to measure the level of correspondence between the course contents of fusion cuisine and moleculary gastronomy departments of Turkish universities and the basic philosophy of the course

Table 3: The Level of Correspondence between the Course Contents of Fusion Cuisine and Moleculary Gastronomy Courses and the Basic Philosophy of the Course

Courses in Departments	Focused Course Content	Courses in Departments	Focused Course Content
A University	Decoration	X University	Biochemistry
B University	Cuisine Combination	Y University	Nutritional Principles
C University	Core Competence	Z University	Biochemistry
D University	Spices		
E University	Cuisine Combination	Note: Fusion cuisine course is given in universities indicated as A,B,C,D,E,F,G;	
F University	Creativity	molecular gastronomy course is given in departments indicated as X,Y,Z.	
G University	Terminology		

When the course contents of fusion cuisine and molecular gastronomy courses in world's most important schools on Gastronomy at undergraduate level, such as Le Cordon Blue, The French School of Culinary Arts, International School of Culinary Arts, The Culinary Institıte of America, are examined; it is determined that fusion cuisine course contents are more focused on creativity and cuisine combination, whereas molecular gastronomy course contents are focused on developing the skill of creativity upon physical and chemical changes in cuisines. However, fusion cuisine course contents of gastronomy and food-beverage departments in Turkish universities also focus on skills such as decoration, core competency, spices and terminology as well as developing the necessary skills of cuisine combination and creativity. Molecular gastronomy course contents

focus on biochemistry and nutrition principles instead of developing the skill of creativity upon physical and chemical changes.

CONCLUSION AND RECOMMENDATIONS

The study analyses course contents of undergraduate departments in different regions of Turkey, which give fusion cuisine and molecular gastronomy education, at three different stages, whcih are practice-theoretical rates, positioning level of courses, and the level of correspondence between the course content and the basic philosophy of the course. It is determined that courses in fusion cuisine and molecular gastronomy should be more focused on practice, whereas it is more focused on the theoretical part in Turkey.

When the positioning levels of the courses in fusion cuisine and molecular gastronomy departments at undergraduate level in Turkey are examined, it is determined that they focus on the fifth academic term. However, it is assumed that students can gain the basic philosophy and core competencies in the fifth term in aforementioned departments. Thus, the need rises for giving the aforementioned courses in seventh and eigth terms in order to increase the efficiency.

Fusion cuisine course contents of gastronomy and food-beverage departments in Turkish universities also focus on skills such as decoration, core competency, spices and terminology as well as developing the necessary skills of cuisine combination and creativity. It is determined that molecular gastronomy course contents focus on biochemistry and nutrition principles instead of developing the skill of creativity upon physical and chemical changes.

In consideration of these data, fusion cuisine and molecular gastronomy courses should shift from theoretical to practical implementation and be positioned in the last two academic terms in order to increase the efficiency of fusion cuisine and molecular gastronomy courses in gastronomy and food-beverage departments of Turkish universities. In addition, the course contents of fusion cuisine education should focus on developing skills of cuisine combination and creativity, and the course contents of molecular gastronomy education should focus on developing the skill of creativity upon physical and chemical changes.

IJONTE's Note: This article was presented at 5th International Conference on New Trends in Education and Their Implications - ICONTE, 24-26 April, 2014, Antalya-Turkey and was selected for publication for Volume 5 Number 3 of IJONTE 2014 by IJONTE Scientific Committee.

BIODATA AND CONTACT ADDRESS OF AUTHOR

Mehmet SARIOĞLAN is a assistant professor (PhD) at Tourism Faculty at Balıkesir University in Turkey. He graduated from the department of Hospitality Management at Balıkesir University in 2004. He gets her M.S degree in 2007 at the department of Tourism & Hospitality Management and PhD degree in 2011 at the department of Tourism & Hospitality Management. He is interested with food & beverage management, gastronomy, gastronomy tourism and gastronomy education.

Mehmet SARIOĞLAN
Balıkesir University
Tourism Faculty
Gastronomy and Kitchen Arts Department
Balıkesir- TURKEY
E. Mail: mehmets@balikesir.edu.tr

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