

Sharing Professional Viewpoint:
Key Elements of Innovative Chef in the 21st Century

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1. Introductory Note

In the past decade, the culinary world has changed exponentially. Food is no longer all about taste and *chef* is not all about cooking delicious food for hungry customers anymore. An ability to invent a specialty menu, both in terms of nutrition or sensation is essential for a future professional chef and related advanced careers. Job outlook information from U.S. Bureau of Labor Statistics (BLS) reported that demand for chefs and head cooks during 2014-2018 was increase by 11% and the average salary of the chef's position in fine dining or hi-end restaurants is elevated to USD 52,160 annually (www.bls.go). Such information points to high demand for professional chefs in a rather strong competition context. Previously, professional chefs usually start in the kitchen as assistants or line cooks. After years of experience, they could be promoted to a higher position and finally become head chefs. Most chefs accelerate their career path by attending the non-degree culinary program and combining their knowledge with experience.

As known, the twenty first century is the era of digital and technology, and creativity and innovation being emphasized in various professions; chef is no exemption. Even though a chef is able to climb up from a lower position to a supervisor chef; however, with high competition, chefs equipped with extra knowledge on top of their culinary skills and kitchen management will differentiate themselves to win in the arena. As a result, a professional degree has become an advantage for a chef to get into a management role throughout the hospitality industry. A Bachelor's degree could provide a secure path and a wide range of jobs including products and developments in the food and wellness industries. There are certain characteristics to make a successful chef such as multitasking, stress management, communication and dexterity. Nevertheless, to transform all these into an innovative professional chef is far beyond an academic program can render. Innovative chefs have to learn more about the fundamentals of health food, product development, knowledge in supplements, nutrition for niche markets, bioactive compounds in food as well as learning how to apply scientific know-how/ tools to create their signature menus.

2. Research Chefs

It can be noted that new line jobs of the twenty-first century require innovative chefs not confined to cooking; that is, *research chefs*, also known as product developers or food innovation chefs. The BLS reported that research chefs and food scientists were estimated to increase approximately 5% during the same decade. In comparison, higher paid of research chefs and food scientists was expected with USD 65,300 (median salary), while chefs and head cooks were able to make a median income of only USD 48,460 in year 2018. Research chefs' job description is to create or develop new products for food and beverage manufacturers as well as hotel and restaurant chains. Not only generating new recipes that look and taste good,

but research chefs would also be able to substitute the old formulation with novel ingredients in order to add value to the products. They are expected to create health food and commercial product development, supplements, sports nutrition, and corporate and public health wellness. Research chefs need to possess science and technology knowledge, for they have to collaborate with food scientists in advanced food-processing regularly. A good understanding of preservation and shelf life of various packaged items is also necessary for research chefs in order to extend the product's life. For innovative chefs who want to own business, enterprise skills are needed to enhance career prospects with transferable and commercial skills in business development and product launching.

3. Considerations for an Innovative Chef Program

From the author's point of view, in order to nurture a chef into an innovative chef for hospitality and food and beverage industries, additional competencies are required. The promising program to cultivate the future chef should take the following key ingredients into consideration:

1. Mathematics

Calculating skills are needed for cooking and plays an important role for better understanding. However, a mathematics course for chefs should be different from general mathematics. Chefs need solid mathematical concepts for cooking, especially how to handle different weights and mass impact cooking time, how to break down the cost of each menu and pricing it in order to earn profit, how to convert measuring units for respective recipes, and the like. Practicing will help chefs to excel in those fundamental concepts.

2. Business administration

Since hospitality and food industries are still in the business sector, developing of enterprise skills will assist the organization to control the budget and earn some profit effectively. Chefs are not in charge of operating the entire business directly but they are in charge of almost everything related to food itself. As known, most chefs wish to have a business of their own. In this regard, taking an entrepreneurship course can really help them to figure out business operations as well as to handle the cost of food and labor, manage employees and diversify their menu items. Combining knowledge and skills of culinary art, kitchen management and food control will help them to develop a variety of good menus as well as their signature dishes.

3. Science and Technology

At present, knowledge and skills related to science and technology are dominant. Scientific tools and techniques will help chefs to create new innovative products responsive to target groups and easy for marketing. Future chefs should possess solid understanding in food technology, particularly food chemistry, food microbiology, food safety, product development and nutrition. Those concepts will be significant for innovative chefs in order to produce food with scientific claims but still appealing to their customers. Food chemistry courses are for chefs to get an idea of how the composition of food changes during cooking with various techniques which include interaction, combination, transformation and so much more. It should be noted that trending molecular gastronomy--a combination of science and art--is also well recognized as a modern cooking science providing lots of inventive idea to

chefs. Sciences will also help chefs to understand the impact of nutrition on health and related diseases. Chefs should know how to screen and identify people who are well-nourished or malnourished by using *anthropometric assessments* together with *nutritional assessment of diet*. With such knowledge, innovation could be in reality for chefs--after investigating the effect of macronutrients and micronutrients on human health and diseases--to create current diet trends, such as low sodium recipes, gluten free recipes, hi-fiber recipes, lactose free recipes, flexitarian, ketogenic, veganism, and 3D food printing technology, to name but the major ones.

4. Food Presentation.

From the literature, it has been proved that the sense of sight stimulates the appetite (Spence et al., 2010; Passamonti et al., 2009). Customers in the restaurant will experience their food through their vision and olfactory nerves before tasting. The most delicious meal without satisfactory scent and plate decoration may not provide customers with full appreciation. Therefore, basic understanding of art and food aesthetics is an essential element for a magnificent chef. Food aesthetics is an art of food plating that includes a number of techniques like how to effectively layer sauces, understanding the appropriate height and width of plate and food styling, and how to splash colors to enhance food presentation. The importance of the aesthetics of food is that it affects people's overall preferences by visual composition of food on the plate, and impact on the consumption experience. The food aesthetics experiment at the Science Museum in London, clearly demonstrated that people prefer balanced to unbalanced plate presentations of exactly the same ingredients for overall compositions (Velasco et al., 2016).

4. Conclusion

The author has shown in this brief writing the new demands on professional chefs. Chefs are expected to be able to research into the menus they have created in terms of scientific knowledge in biochemistry and nutrition. Of course, an academic degree in culinary art and technology could serve as a good platform for those who wish to enter the world of chefs and excel in their career as research/ innovative chefs as well as creative entrepreneurs. Still, successful chefs need sharp senses for food, sustainability in professional self-development including language communication skills, and certainly without doubt, their ethical standards.

5. The Author

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6. References

Passamonti, L., Rowe, J.B., Schwarzbauer, C., Ewbank, M. P., von Dem, H. E. & Calder, A. J. (2009). Personality predicts the brain's response to viewing appetizing foods: the neural basis of a risk factor for overeating. *Journal of Neuroscience*, 29, 43-51.

Spence, C., Levitan, C. A., Shankar, M. U. & Zampini, M. (2010). Does food color influence taste and flavor perception in humans? *Chemosensory Perception*, 3, 68-84.

Velasco, C., Michela, C., Woods, A. T. & Spence, C. (2016). On the importance of balance to aesthetic plating. *International Journal of Gastronomy and Food Science*, 5-6, 10-16.