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Teaching and Cooking with Culinary Teachers

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The world of cooking is full of pertinent statements on how to do things and occasionally, why one should follow the advice given. Such practices are questionable and provide rich research material for various disciplines, including geography (distribution of food practices), history (evolution of food practices), and, of course, physics and chemistry (what is the rationale behind these practices?). Besides pure research, several outcomes are expected to emerge, for instance regarding education and professional practices. Indeed, a better understanding of culinary phenomena can not only be the goal of diverse pedagogical projects in all schools (see other chapters in this book dedicated to this issue), but it can more specifically also influence the way we cook (and the way we teach cooking skills) in professional schools.

What should we teach to our students who are learning how to cook? Let’s have a quick look at how teaching evolved in French cooking schools in the last 60 years. In the 1950s, students mainly learned recipes and were only supposed to reproduce these “traditional” recipes. In the 1970s came “nouvelle cuisine”: new dishes had a strong appeal for chefs and customers. Then in the 1980s, teaching content slowly shifted from recipes to techniques (to invent recipes). In the 1990s came “molecular cuisine”: chefs again had a strong interest in being innovative, and the innovation was based on scientific investigations. In the 2000s, science started to be injected into professional cookery books. Nowadays, the tendency is growing, and culinary programs contain more and more science for fewer and fewer recipes.

I provide here a concrete example from the French culinary bachelor degree. In 1995, the official program, entitled “cooking technology and methods”, asked the teachers to show the students how to:

• peel, segment, slice, crush, chop, slash, prepare shellfish, dress and truss poultry, prepare fish, blanch.
• cook in a liquid: eggs, green vegetables, dried vegetables, pasta and rice, fish, meat.
• steam: fish, vegetables.
• grill: white meat, red meat, fish, poultry, vegetables.
• roast: white meat, red meat, poultry.
• sear.
• sauté: vegetables, eggs, breaded items, fish.
• bind/thicken a liquid base with: a roux, a kneaded butter, a fat, egg yolks, mashed vegetables.
• concoct basic sauces and stocks: tomato sauce, veal stock, fish velouté, etc.
• produce cold emulsions.

In 2015, the official program was renamed “culinary science and technology” and asked the teachers to:

• identify key physical/chemical phenomena generated by the culinary act (transformations of fat, protein, carbohydrates, water; impact of temperature; properties of foams and emulsions).
• develop a strategy adapted to the class level, avoiding the strict reproduction of techniques.
• demonstrate the physical/chemical phenomena as part of the observed processes.
• further reveal these discoveries during experiments, observations, demonstrations … and to make the link with the science class.

Obviously, this is a big change! Teachers have to adapt; scholarly books have to be re-written. But this is probably the best way to obtain not just “robots”, able only to reproduce the same dish over and over, but instead true culinary artists who will maintain cuisine as a living art. “The discovery of a new dish does more for the happiness of mankind than the discovery of a star”, said Brillat-Savarin in his Physiologie du Goût (1825). Let’s all work for this!

Note: I have been responsible for the scientific training of culinary teachers at the (French) national level for 10 years now. In order to fulfil their diploma and officially receive their nomination as a teacher in a culinary school anywhere in France, students have to pass a master’s degree. All the dishes presented here are part of tasting menus prepared by these “training-teachers” for real customers and served in the pedagogical restaurants of the INSPE (French National Institute for Teaching and Education) in Antony (under the supervision of Jacques Lamarque and Bruno Cardinale). As a “game”, I usually ask them to use modern ingredients/tools/techniques and always propose fresh ideas, not
FIGURE 107.1 Purple potato (vitelotte) mousse and chips, by Afonso Herminio (2020).

FIGURE 107.2 Oysters in a verbena jelly, carrot caviar, fresh dill, by Thierry Rasoanaivo (2019).

FIGURE 107.3 French meringue, beetroot sorbet, beetroot marshmallow, beetroot powder, Chioggia and yellow beetroots condiment, by Jamil Fathallah (2020).


FIGURE 107.5 Monkfish in bacon, radish jelly, radish chutney, beer foam and broccoli/almond soufflé, by Thierry Rasoanaivo (2018).

FIGURE 107.6 Trout tartar, tzatziki ravioli, olive oil hot mousse, algae ice cream, squid ink lace, by Sandra Chevallier (2017).
only to surprise the customer but also to “challenge” their ability to create and go beyond their “comfort zone”. The aim in this contribution is not to try to reproduce the dishes (which would be in exact contradiction with the creativity encouraged here!), so the detailed recipes are not provided but only a short description, which helps to give a quick snapshot, through ten dishes, of the work currently being done by these future teachers in French culinary public schools.

FIGURE 107.7 Pigeon (chest and leg), confit carrots, polenta, by Jean-Baptiste Douce (2020).

FIGURE 107.8 Pineapple marshmallow, licorice jelly, yogurt sphere, milk skin, rum air, meringue, by Stéphane Tulmets (2019).

FIGURE 107.9 Vanilla entremet with honey and chocolate ganache heart, honey/cinnamon biscuit, honey wafer, honey meringue in liquid nitrogen, by Clarisse Joseph-Louisa (2020).

FIGURE 107.10 Chocolate sphere, litchi bubble, matcha frozen sponge cake, ginger ice cream, red fruit coulis, by Davy Le Meur (2019).