At the beginning of the 19th century, in France, there was a deep coherence between the algebra that was taught in high schools and universities and algebra as a field of research, namely, at that time, the theory of equations. By contrast, at the end of the 19th century, algebra as a field of research could no longer be reduced to the theory of equations anymore: a new way to make algebra was developing, with new objects and new practices. At the same time, the teaching of mathematics was changing too: there were many more students learning it, and several periodicals were created to reach this new audience. In a broader way, at the beginning of the 20th century, the teaching of mathematics was the topic of debates between mathematicians (French or not), and the French educational systems was reformed. Did the teaching of Algebra follow the evolution of research, or did it become independent of it? In this talk, I will first explain briefly the situation of the teaching of Algebra at the beginning of the 19th century. I will then address the issue of its evolution in the period 1870-1914 by correlating changes in research and in the educational system. Finally, I will suggest some guidelines for a comparison of the situation in France and in the US. (Received September 21, 2011)