Nowadays, mathematics teachers are confronted with a myriad of technological tools and resources that are available through technological means and through the internet in particular. However, teachers may perceive difficulties in orchestrating education which makes use of these new opportunities. A new repertoire of teaching techniques, instrumented by the available tools, begs to be developed. In order to help teachers to benefit from technology in everyday mathematics teaching, therefore, it is important to have more knowledge about the new teaching techniques that emerge in the technology-rich classroom. In this presentation I report on the results of two studies on teacher behaviors, orchestrations and techniques, as they emerge in pilot settings in which technological tools play an important role. With the notion of instrumental orchestration as a theoretical lens, the results include the identification of different types of orchestrations, and the recognition of the links between teachers’ preferences for these orchestrations and their views on mathematics, mathematics education and the role of technology therein.