One of the most important goals of science education is preparing effective science teachers, which includes the development of a science pedagogical orientation. Helping in-service science teachers improve their orientations toward science teaching begins with identifying their current orientations. While there are many aspects of an effective science teaching orientation, this study specifically focuses on effective pedagogy. The interest of this study is to clarify pedagogical orientations of middle school science teachers in Turkey toward the teaching of science conceptual knowledge. It focuses on what instructional preferences Turkish middle school science teachers have in theory and practice.

The purpose of this study is twofold: 1) to elucidate teacher pedagogical profiles toward direct and inquiry instructional approaches and
2) to identify teaching orientations of middle school science teachers and to identify their reasons for preferring specific instructional practices. For first purpose, quantitative profile data, using a Turkish version of the Pedagogy of Science Teaching Test (POSTT-TR) assessment instrument, was collected from 533 Turkish middle school science teachers. For the second purpose, descriptive qualitative, interview data was collected from 23 teachers attending a middle school science teacher workshop in addition to quantitative data using the POSTT-TR. These teachers sat for interviews structured by items from the POSTT-TR. Thus, the research design is mixed-method. The design provides a background profile on teacher orientations along with insights on reasons for pedagogical choices.

The findings indicate that instructional preference distributions for the large group and smaller group are similar; however, the smaller workshop group is more in favor of inquiry instructional approaches. The findings also indicate that Turkish middle school science teachers appear to have variety of teaching orientations and they have varied reasons. Moreover, the research found that several contextual factors contributed to teachers’ instructional practices including internal and external issues such as school environment, limited resources, large class sizes, standardized test pressure, and limited accessibility to professional development. The findings provide insight on the readiness of middle school teachers to implement the Turkish Curriculum Framework, specifically, teacher readiness to put science inquiry instructional approaches into actual classroom practice. Given that new Turkish policy calls for greater inquiry instruction, this study can help inform teacher development efforts directed at promoting science inquiry instruction.