Mode of instruction used in teaching is key to the understanding of the concepts and skills to be learned. Instruction in classrooms is controlled to a larger extend by the interaction patterns involving teachers, learners and resources. Some interaction patterns seem to promote learning especially science subjects. Kenya has been recording very low performance in Physics for a long period of time. This concern prompted this study on interactions in physics lessons with the aim of determining the common patterns that can aid in drawing possible inferences on the effects of instruction in science subjects. The study was descriptive in nature and used five schools in one division of Kangundo district. The main instrument was modified Flanders’ Interaction Analysis Categories (FIAC) which was used in Physics lessons. The data was analysed using ratios, percentages and chi-square. It was observed that there exists a significant difference in the teachers’ verbal behavior patterns in the boys’ and girls’ schools. Teachers in girls’ schools used patterns related to ‘direct’ methods which created autocratic climate in class and hence limited participation in girls during lessons. On the other hand, patterns in the boys’ schools related to ‘indirect’ methods which encouraged boys to ask questions and interact with resources more, thus creating a more democratic learning climate. On the overall, most teachers leaned towards patterns that created autocratic climate which may not be suitable for learning physics and science subjects in general.