High prevalence rates of corporal punishment in schools worldwide and the associated negative mental health issues show the need for interventions addressing this problem. Yet, so far there are very few intervention studies aimed at altering corporal punishment administered by teachers, particularly in low- or middle-income countries. To conduct a feasibility study of the newly developed intervention approach, Interaction Competencies with Children for Teachers (ICC-T)—a training workshop designed to prevent corporal punishment and improve the teacher-student relationship. The 1-week ICC-T intervention was conducted with 30 teachers in a Tanzanian primary school. Participants filled out a survey before, directly after, and 3 months following the intervention. The widespread use of corporal punishment indicated strong demand for a preventive intervention. The feasibility of ICC-T was good: Despite challenging conditions, implementation of the training and participants' acceptance was high. Further, participants reported a good integration of the training's core elements in their daily working routine, improvements in the teacher-student relationships, and in the students' behavior. ICC-T shows a promising feasibility in the Tanzanian teacher sample. These encouraging results highlight the need for further studies testing the efficacy, sustainability, and effects of ICC-T on the students' well-being.