

**PERCEPTIONS OF A GROUP OF PRIMARY TEACHER  
TRAINEES AND MATHEMATICS TEACHER TRAINEES ON  
THE USE CALCULATORS AS A COGNITIVE TOOL**

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Hand-held personal technology (H-hPT), e.g. calculator, can be used as a cognitive and mathematical tool in enhancing mathematical understanding, and give the opportunity to the user to confront with the real life mathematics. As a result, students at each grade level achieve a higher degree of mathematical thinking and save time for problem solving. In the present study, which is an ongoing project on H-hPT, a group of teachers' and teacher trainees' perceptions of calculators as a cognitive tool in mathematics instruction is searched, and their views were reflected to some extent. In the study, the researchers have looked for the answers to following two questions: (a) What are the differences between the perceptions of teachers and teacher trainees about the use of calculators, (i) calculators as a cognitive tool, (ii) using calculators in maths classroom, (iii) use calculator in problem solving? (b) What are the differences between the development problem-solving skills of teachers and teacher trainees before and after the seminar and workshop in mathematics teaching and learning? In the first year, the planned activities were programmed and scheduled as seminar and workshop for the participating mathematics teachers from various schools, teacher students and teacher trainees from Balıkesir University in Turkey. A rather detailed questionnaire was administered in the two-days seminar and workshop to the participants, and an interview protocol was designed and applied after the activities. In the interview, 6 teachers and 12 teacher trainees were participated.

The statistical analysis of the designed questionnaire is in the process, and some results have been obtained. The first result shows that although the teachers and teacher trainees had negative opinions about the use of calculators in mathematics instruction and student-centred activities at the beginning of the seminar and workshop, their attitudes and beliefs were changed towards positive at the end. Interview results are also supporting this notion. The detail of two-day seminar and workshop and their reflections to the interview will be reported, and teachers' and teacher trainees' perception and views will be reflected in presentation of the paper.