

**PRE-SERVICE MATHEMATICS TEACHERS'  
PEDAGOGICAL CONTENT KNOWLEDGE OF DEFINITE  
INTEGRAL:  
THE PROBLEM OF LIMIT PROCESS**

Hatice Akkoç  
Marmara University  
Faculty of Education  
TURKEY

Sibel Yeşildere  
Dokuz Eylül University  
Faculty of Education  
TURKEY

Fatih Özmantar  
Gaziantep University  
Faculty of Education  
TURKEY

*This study investigates prospective mathematics teachers' pedagogical content knowledge (PCK) of definite integral. Considering the notion of PCK as described by Shulman (1986, 1987), we will investigate prospective mathematics teachers' knowledge of student difficulties in relation to the limit process to define definite integral. For that purpose, four prospective mathematics teachers' were observed during their micro-teaching and were interviewed afterwards. Micro-teaching videos, interview transcripts, prospective teachers' lesson plans and teaching notes were analysed. In this presentation, we will discuss how prospective teachers addressed student difficulties for the limit process when constructing the area under a curve from the sum of rectangular areas and consider the implications in terms of PCK.*