ABSTRAK

Andri Suryana (2016). Meningkatkan *Advanced Mathematical Thinking* dan *Self-Renewal Capacity* Mahasiswa melalui Pembelajaran Model *PACE*.

Tujuan utama penelitian ini adalah untuk menganalisis secara komprehensif pencapaian dan peningkatan *Advanced Mathematical Thinking* dan *Self-Renewal Capacity* mahasiswa sebagai akibat dari implementasi pembelajaran Model *PACE* (Proyek, Aktivitas, Pembelajaran kooperatif, Latihan) dan konvensional. Penelitian ini merupakan penelitian kuasi eksperimen menggunakan *pretest-posttest control group design*. Populasi dalam penelitian ini adalah seluruh mahasiswa regular Program Studi Pendidikan Matematika di salah satu PTS di Jakarta Timur, sedangkan sampelnya adalah mahasiswa yang sedang menempuh mata kuliah Statistika Matematika. Penelitian ini menggunakan beberapa instrumen, yaitu tes kemampuan awal matematis, tes *Advanced Mathematical Thinking*, skala *Self-Renewal Capacity*, lembar observasi, dan pedoman wawancara. Analisis data dalam penelitian ini menggunakan statistik parametrik dan non-parametrik. Adapun hasil dari penelitian ini adalah: (1) pencapaian dan peningkatan *Advanced Mathematical Thinking* dan *Self-Renewal Capacity* mahasiswa yang memperoleh pembelajaran Model *PACE* lebih baik daripada mahasiswa yang memperoleh pembelajaran konvensional; (2) tidak terdapat interaksi antara pembelajaran (Model *PACE* dan konvensional) dan kemampuan awal matematis (tinggi, sedang, rendah) terhadap pencapaian dan peningkatan *Advanced Mathematical Thinking* dan *Self-Renewal Capacity* mahasiswa; serta (3) terdapat asosiasi antara *Advanced Mathematical Thinking* dan *Self-Renewal Capacity* mahasiswa.

Kata kunci: *Advanced Mathematical Thinking*, *Self-Renewal Capacity*, pembelajaran model *PACE*

ABSTRACT

Andri Suryana (2016). Enhancing of The Students` Advanced Mathematical Thinking and Self-Renewal Capacity through PACE Model Learning

The main purpose of this research is to analize of achievement and enhancement of the students` Advanced Mathematical Thinking and Self-Renewal Capacity comprehensively as a result of the implementation of PACE (Project, Activity, Cooperative learning, Exercise) model learning and conventional learning. This research used a quasi-experimental with pretest-posttest control group design. The population of this research included all students of regular class in the mathematics education department of one of the private universities in East Jakarta and the sample was group of students joining Mathematical Statistic Subject. This research used various instruments. They were test of mathematical prior knowledge, test of advanced mathematical thinking, self-renewal capacity scale, observation sheet, and interview sheet. For data analysis, this research used parametric and non-parametric statistic. The result of this research are: (1) the achievement and enhancement of the students` Advanced Mathematical Thinking and Self-Renewal Capacity taught by using PACE model learning are better than the achievement and enhancement of those who were taught by using conventional learning; (2) there is no interaction between learning (PACE model learning and conventional learning) and mathematical prior knowledge (high, intermediate, low) towards the achievement and enhancement of the students` Advanced Mathematical Thinking and Self-Renewal Capacity; and (3) there is association between the students' Advanced Mathematical Thinking and Self-Renewal Capacity.

Keywords: Advanced Mathematical Thinking, Self-Renewal Capacity, PACE Model learning