REVIEW OF EFFORT RATE (ER) VALUE IN USE CASE POINT (UCP) METHOD FOR EFFORT ESTIMATION IN EDUCATION SOFTWARE DEVELOPMENT PROJECT

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Abstract

Effort estimation should be done by the project team to predict how many workers and how long it will take. Among the several methods used for the calculation of the estimated, currently Use Case Point method (UCP) is more widely used. UCP method was first popularized by Karner in 1993. This method is widely used because it is based on several studies related to UCP, explained that the UCP method is better than the method developed by experts. UCP method is able to provide estimates effort to do the multiplication between the UCP and value Effort Rate (ER). ER values proposed by Karner is 20 staff-hours were obtained from three data and only calculation of correlation. Many studies in the calculation of the value of ER that refers to the value proposed by Karner, but until now no one has debated the origin of the ER value.

The final study raised review of the value of ER required software development projects in education. In conducting this research, it takes some amount of data related to the development of educational software projects. The data is used to find the value of ER. The method used is to perform correlation analysis and linear equations. This method will be used to look for patterns of relationship of each data, thus forming a linear
equation and produces a line tangent value. The tangent value can be used to calculate the value of ER.

The final result of this research is a new ER value 8.1 staff-hours of data were obtained from 7 education software development project. The value of new ER has a considerable proportion of ER values proposed by Karner, this is caused by the possible factors: 1) The Software Engineering Technology, 2) Method of Software Engineering, 3) The Software By Component, 4) The Software by Framework.

**Key Words:** Effort, Estimasi Effort, Use Case Point (UCP), Effort Rate (ER), Correlation Analysis and Linear Equations.