

## ABSTRACT

Improving the quality of education is felt as a need of a nation that wants to advance. With the belief that quality education can support development in all fields. However, as many as 600,000 elementary school children in Indonesia are supposed to go to school but cannot enjoy Education. Education is still an issue that has never been discussed in this country. There are still many educational problems in Indonesia that encourage many parties to take action to improve this condition. Based on these problems, a solution will be made in the form of analysis and grouping of elementary school education data in Indonesia using the Self-Organizing Map method to see the results of grouped data visualization.

Self-Organizing Map is a technique in Neural Network that aims to visualize data by reducing data dimensions through the use of Self-Organizing Map, so that humans can understand high-dimensional data mapped in the form of low-dimensional data. Data clustering is done using data obtained from the Ministry of Education and Culture of the Republic of Indonesia. The data used is a combination of several data features that are made into a data file in Microsoft Excel .csv format.

The web application is implemented using R Shiny in the R Programming language. This website will display elementary school test data tables, codebook vectors Self-Organizing Map algorithm, training mean distance, and new data tables with the addition of circle cluster plots to display the results in the form of data grouping and the plot placement of provincial members grouped into clusters and circles. Data visualization is also used to see the characteristics of each cluster that has been grouped and to get the results of the analysis sought.

**Key Word:** elementary school, clustering data, self-organizing map