The objective of this project was to study the use of the R environment in teaching Statistical Quality Control. The main purpose was the elaboration of a tutorial for students in engineering courses at the University of the State of Santa Catarina, Brazil.

Statistical methods can be used to solve problems related to improving the quality of products and services. These methods can be applied to a wide range of areas in an organization, such as, for example, manufacturing processes, planning, finances, engineering, marketing, technical assistance, among many others. Statistical Process Control – SPC – is a collection of tools that are useful to solve problems involving the monitoring and control of a process and have the capacity to improve the process through the reduction of variability. The tutorial includes a brief theoretical introduction to the subject.

R is a free computer software language and environment for statistical analysis that includes a package called QCC – Quality Control Charts – that performs quality control graphical displays. The tutorial presents a summary of exploratory data analysis, the main discrete and continuous distributions, and an introduction to inference related to process quality with the help of R. We also show the main SPC tools, such as histograms, stem-and-leaf diagrams, Pareto charts, dispersion and cause-and-effect diagrams and, mainly, how the $x$, $R$ and $S$ control charts can be build, in R. The Shewhart control chart for individual measures is also introduced. The tutorial uses simple examples from the literature common in undergraduate courses, and always points out the interpretation of results.

Our conclusion is that R is an alternative tool for learning about statistical quality control, with the advantage of easy access. We intend to continue this project and expand it to the academic community and to small companies in the region.