

Life Cycle Thinking in Brazilian Mechanical Engineering and Pos-Graduation Courses

Cassia M. L. Ugaya, cassia@cefetpr.br

Life Cycle Thinking (LCT) is not yet included in Brazilian Mechanical Engineering curriculum, however since 2001 there is an optative discipline in Mechanical Engineering Course at CEFET-PR and in several post graduation courses (latu and strictu sensu) throughout the country.

In order to disseminate LCT an exercise was proposed which was performed by more than 250 people.

The exercise consisted of choosing which kind of product should be produced to obtain the less environmental problems considering only one environmental impact, that is, climate change. Two products were considered, each of them could be obtained from two different materials. Five groups were formed and each one corresponded for a life cycle stage (extraction, manufacturing, transportation, use and disposal). In each exercise there was a connection to other life cycle stages. In order to choose the products, it was also necessary to choose the equipments, data from CO₂ and CH₄ were given.

Two different approaches were performed to develop the exercise: i) the first one was without any previous explanation, which accounted with 88 people; ii) the second approach was performed after a discussion about individual and group optimum.

Main results showed that, no matter the approach applied, all the studentes did not take the life cycle thinking into account. Each group solved the problem considering just its life cycle stage, which resulted in different production options. They were very confused in the first moment, but then the Life Cycle Thinking was presented and the students were able to conclude which was the best result.

CEFET-PR
0055-41-310-4884
Av. Sete de Setembro, 3165
CEP 80230-901 Curitiba, Brazil