

MAPLE from the point of view of non-native speakers – students of technology

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Aims of the research and of this contribution

As a part of the FRVŠ research project *Language support of teaching mathematical subjects* this contribution deals with the issue of language barrier in teaching mathematics. It examines MAPLE – a software product not communicating in Czech – from the point of view of a Czech speaker, a first year (or rather early bachelor) student of technology with no previous knowledge of MAPLE other than basic rules of syntax and no knowledge of mathematical terminology in English. The contribution is a sequel to a similar article on MATLAB.

Three simple tasks have been set for the purposes of this contribution:

- count an inverse of a matrix,
- solve a system of linear equations,
- find a value of a derivative of a function at a given point.

The contribution is trying to model and follow a typical students' strategies in solving the above mentioned tasks using MAPLE. When doing this, we place ourselves in the position of a member of a target group, i.e. we pretend not to know the software and we adjust our English accordingly. As this contribution can be viewed as a sequel to [3], references to the strategies used for solving the same tasks in MATLAB are often included.

The overview of MAPLE help resources is included for readers' convenience. The format of all the task solutions is the same and corresponds to [3]. This holds for the format of the contribution in general as well.

Conclusions

MAPLE help files turn out to be of greater help for target students than those of MATLAB. The Context sensitive help is a decisive element as it leads to relevant entries more directly; it also enables entering a number of variations, which is not possible with the MATLAB Command window help. The choice and presentation of examples is also much better in MAPLE. Therefore, if the "better – worse" conclusions are to be made, MAPLE is the winner.

However, making a comparison of MAPLE and MATLAB was not the intention of our effort. We wanted to show that MAPLE and MATLAB users – bachelor students of technology – face the same problems. Help files navigation is difficult in both of the products (or rather difficult in MAPLE and almost impossible in MATLAB) without at least basic knowledge of mathematical terminology in English. Once students have knowledge of even a handful of basic words, their performance can improve dramatically. This can in turn improve the efficiency of both teaching and learning of mathematics.

A broader discussion on the issue of knowledge of mathematical terminology in English as a means of improving students' performance as well as some statistical data collected during the research can be found in [4]. For the overview of subjects teaching mathematical terminology in English to the target group at FEEC BUT and a more detailed discussion on the topic, see [2].

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