

LEARNING DIARIES AND SELF-REGULATION IN MATHEMATICS

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Many students face serious problems when starting a university course in science, technology, engineering, or mathematics. At Ruhr-Universität Bochum, the project MP² (Math/Plus/Practice) aims at supporting engineering students in mathematics. Various interventions are being tested in order to find out which can help students to develop learning strategies that can assist them to successfully complete their studies.

MP² has so far covered a period of two years, starting in summer 2010, preceded by planning and accompanied by evaluation. It is divided into two parts, Math/Plus and Math/Practice. The first aims at improving learning strategies and motivation, the latter (which is the centre of a different paper) at providing examples of practical engineering applications of mathematics in connection with motivating project work. By summer 2012, more than 300 students will have been involved in our project, divulging multitudinous data. There are numerous interventions in Math/Plus (e.g. tutorials, an e-learning course, a helpdesk, a revision course, questionnaires and, evidently, learning diaries) which were applied to different groups of students.

At the beginning of their university studies, as well as at the end of their first semester, students were asked to fill in the LIST questionnaire on learning strategies (Wild & Schiefele, 1994). Thus, developments and differences between the project groups could be found, interpreted and (in some cases) attributed to the project interventions. The learning diaries' (Schmitz & Wiese, 2006) specific aim was to encourage the students to modify their learning behaviour. Over a period of ten weeks in their first crucial year at university students recorded not only their learning times, frequencies and strategies but also their mental state and motivation. Therefore the learning diaries enable us to compare these to the learning strategies students claimed to use in the pre and post LIST questionnaires. Hence they allow us to get a more detailed view of the regulation of learning behaviour in mathematics.

The poster presents excerpts from the LIST questionnaire and the learning diary, details of the project work as well as selected results.

References

- Schmitz, B., & Wiese, B. S. (2006). New perspectives for the evaluation of training sessions in self-regulated learning: Time-series analysis of diary data. *Contemporary Educational Psychology*, 31, 64-96.
- Wild, K.-P., & Schiefele, U. (1994). Lernstrategien im Studium. Ergebnisse zur Faktorenstruktur und Reliabilität eines neuen Fragebogens. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 15, 185-200.