

Lab Reports: Getting Better Results with Less Work

Activity developed at Cégep régional
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Lab reports very often cause a lot of frustration for both students and teachers. From a student's point of view, writing reports is too timeconsuming, the work required is poorly explained, correction criteria are not clearly defined or understood, and results are frustrating. From a teacher's perspective, correcting the reports is a heavy burden, and the quality of the work improves only very slowly. Students and teachers feel overwhelmed by the workload, and results are considered disappointing. This pedagogical strategy allows students to acquire a writing method that can be applied to any subject. It also makes them well aware of the correction criteria and lets them be active in their own learning. It allows for regular feedback and reduces the students' and teacher's workload. Learning to write lab reports is a gradual process. Students pair up and, during their initial encounter, work on writing the report plan, introduction, manipulations and results. The second time they get together, they then focus on writing the results, discussion and appendix (calculations). From the third experiment onwards, students submit a complete report. The evaluation is formative for the first three reports. Some time is set aside for a selfevaluation during the next laboratory period. Students use descriptive correction grids for that purpose. As for the last two reports, the teacher completes a summative evaluation. The teacher gives students a scoring grid that shows the types of errors (major, medium and minor) to grade the assignments.

This strategy leaves plenty of room for summative, self and peer evaluations. A clear definition of correction criteria and the use of formative evaluations contribute to frequent feedback and lead to a dramatic improvement of results. Selfevaluations and correction by peers allow students to develop their critical thinking skills. In addition, the spirit of cooperation helps to develop a non-competitive positive learning environment. Progressive learning, i.e. a few lab report sections at a time, allows students to reduce their workload. In addition, since students learn how to write a report, they waste less time and are more effective in their work. Formative corrections by peers reduce the teacher's workload. And this workload reduction is not at the expense of student progress. Quite the contrary. Since corrections are done after the teacher's explanations when returning to class, students are capable of a second selfevaluation, and can correct another team's work. The second self-evaluation allows students to adjust the assessment of their work, taking into account the information provided by the teacher. Students can also review their idea of a good assignment before and after explanations, and see an improvement throughout the semester. Students therefore develop their critical thinking skills in addition to getting better results with less work.