

Chapter 8 Conclusion

The most basic problem in doing laboratory reports seems to be a misunderstanding in what the laboratory exercise is about. There seems to be a pervasive point of view that the exercise is about following directions, building stuff according to those directions, and seeing it run. Yes, we do want to build systems and observe phenomena, but it is also important to measure things, understand, and report. The next biggest problem seems to be in preparation. Ultimately the report needs to convey what is observed and concluded in terms of what that important to the purpose.

A common complaint in laboratory work is that the instructor did not give adequate directions. This complaint usually arises because of the limited perspective of the student, who sees himself as just following instructions. In industry, especially when doing innovative work, you will not have “adequate” instructions, and often no instructions at all. That’s what distinguishes being a professional at this: you are capable of figuring out the situation and acting accordingly.

In the context of laboratory reports, and laboratory exercises in general, that means keeping your mind engaged through the whole process. Be sure to understand what the point of the exercise is. Develop expectations: know what should happen in the laboratory. Understand the equipment that you will use in the laboratory, including not just what it does, but what its limitations are. When you see the unexpected, think about it, construct hypotheses and test them, until you understand what is going on. Ultimately, put that understanding into written form that conveys accurately and concisely what has happened, and its significance, to others. Pulling all of these issues together is something to learn by doing. That’s an important benefit of lab exercises.

It's taken me a lot of years to learn such things. I made errors similar to many of yours. Sometimes because I was in a hurry. Sometimes I simply did not have enough time to devote to a class or an assignment. Sometimes I procrastinated or didn't exercise enough self-discipline. Being a student is stressful, and you sometimes have to make tradeoffs in how your resources of effort and attention are committed. Sometimes it's too easy to not meet responsibilities. But, I hope you do at least think about what you are doing. On many student reports, it should not take much more time to do a much better job on the report than a poor one; it just takes stopping to think.

The idea of treating lab reports as a role-playing exercise to prepare for the business world may seem silly, but one way or the other you are going to need to understand what you are doing, why you are doing it, and why someone ought to be paying you, after you graduate. (You do want to be paid for doing interesting work, don't you?) Appendix H takes a quick look at the business context for reports.

So, I hope that if nothing else, you will take these laboratory writing assignments as an opportunity to learn. Do think about what you are doing. Think about the quality of your work, and how to best convey results. What you learn about this will be important for your entire life.