MY LIFE AS TUTOR

Reflections on Two Recent Experiences

Alessandro B. Romeo

Onsala Space Observatory,

Chalmers University of Technology,

S-43992 Onsala, Sweden

(romeo@oso.chalmers.se)

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SUMMARY

In this final report, I briefly reflect on two parallel teaching experiences as tutor: one for 'Computer Science and Engineering in Context' (1998) and the other for 'Introduction to Electrical Engineering' (1998), obligatory courses at Chalmers University of Technology. Special emphasis is put on the former. Besides, I briefly view such experiences in interaction with my research work, private life and new teaching position. In harmony with my conception of teaching, I avoid the standard formal style of reports and try an interactive dialogue with the reader.

Why I am writing this report

The course 'Computer Science and Engineering in Context' is finished and now it is we, the tutors, who should write a final report on our teaching experience. Such reflections are important for at least two reasons: (1) for ourselves, because we can view our experience retrospectively and learn how to improve our role of educators; (2) for the others, either new tutors or course organizers, in order to improve the structure of the course and optimize its impact on the student education at Chalmers.

In writing this report, I will use a colloquial style and imagine to interact directly with the reader. I always use a formal style in writing scientific papers. Here instead I want to experiment with a new way of communicating my ideas, something between an oral discussion and a written report, something more spontaneous and hopefully more effective. So let us discuss the main phases of my experience.

How I got involved in this course

I had just come back from a three-month visit to the International School for Advanced Studies in Trieste, Italy, when I heard that Peter Jansson was recruiting tutors for the course. At that time, I had an urgent need of financial support since my position at Onsala Space Observatory was finished a few months before. So I didn't hesitate to confirm my participation. On the other hand, I did also hope to complete the scientific work started in Italy, and thus I was unwilling to teach intensively before the new year.

The first meeting with Peter and the other tutors was a really positive start. What I liked most of that workshop was, apart from the beautiful place where it was held, the fact that it was structured as an interactive discussion between course organizers, pedagogues and tutors. This is precisely what I believe teaching should be: not a monologue, but an open dialogue between the participants. My previous teaching experience taught me that flexibility and intuition are important qualities in such a respect. After this first workshop, I felt very charged and ready to start.

What I expected and what happened

Before the actual start of the course I felt somewhat anxious. In fact, this was the first time that I should tutor research projects in other fields than physics or mathematics. I am an astrophysicist and know very little about computer science and engineering. Students always expect much from their teachers, and so I expected much from myself. But how could I explain them that I don't know anything about their field and, yet, I could be a good tutor? The best would be of course to clarify my role since the beginning, and so I did.

The initial expectation analyses, one performed on myself and the other performed on my students, gave immediately good results. I felt accepted by the students, and thus I could also trust myself in the new role. This was the premise for a fruitful atmosphere and a successful work.

How I acted: an ABC

A. Next came the problem of how to integrate the important points emphasized at the pedagogy course into my personal method of teaching. My conception of teaching is that it should be dynamic, as opposed to static. So what better opportunity than experimenting brainstorming, snowball and related techniques since the beginning, that is at our first group meeting? Students accepted this idea enthusiastically. They like to experiment new forms of learning, just as we like to experiment new forms of teaching. This is because our mind likes changes. Nobody can guarantee that one method is better than another, it depends on so many factors, most of which are out of our control. What is important is to adapt ourselves as teachers to the students, but such a process should be as swift and smooth as possible. Besides, perhaps even more important, we should show the students that we are willing to learn from them. I believe that such a conception of reciprocal teaching and learning is what can make teachers and students active members of the same team: to give and to receive work always better together.

B. Now a crucial question arises: how can we optimize our interaction with the students? The answer that I found is: observing how students interact between one another, and deciding which role to take accordingly. If we want to observe the real behaviour of students, we should disturb them as

little as possible with our presence and make them unaware of our role of observers. My solution was to say: "I see that you are discussing intensively specific topics of the project. Do you mind if, meanwhile, I read something urgent?" So, while pretending to read an astrophysical paper, I was instead concentrating on their interactions. How long? About half an hour, that is the typical time that students need for forgetting about the presence of an apparently inactive tutor. How many times? About once or twice a month, in order to monitor the evolution of the student interactions. This is especially important for finding out if there are conflicts in the group. In such a case, the best is of course to sort out these conflicts as soon as possible, and the tutor should then act as a real psycho-analyst.

C. Last but not least, what about student evaluation? A key factor to bear in mind is that, whenever people interact, they evaluate one another. This means that not only teachers evaluate students, but also students tacitly evaluate teachers. Both evaluations start from the beginning and last up to the end of the series of meetings, or even beyond. Our goal as educators is to give students good examples even concerning such a delicate point: we should show them that timely and constructive evaluations can be of benefit for both parts. We are human beings, and mistakes belong to our nature. It is through mistakes that children learn to live in the adults' world, it is through mistakes that humanity has progressed to the present. The important thing is to recognize our mistakes and to improve. Yes, if we emphasize this goal as the reason of the evaluations, then we can be sure that students will agree and collaborate. What a better example than to start with ourselves? It is hard but necessary. If we show that we want to improve through the suggestions of the students, then we also show that we are willing to learn from them. What a better satisfaction for the students? To teach their teachers! Everyone teaches and learns at the same time and democratically, as it should be.

In summary: Be a good example for your students not only as an educator, but also as a student and a human being!

If you want to know more

The previous discussion can be extended by referring to my four progress reports, which are unpublished but available on request, and to appropri-

ate literature. Let me first recommend the book and TV series: 'Filosofiska Frågor – Äventyr i Tankens Värld' produced by the 'UtbildningsRadion' in 1998. Such a source does not directly concern pedagogy, but it helps us to reflect on fundamental problems about ourselves and our complex interactions with others, and thus to learn from our life experiences. The literature suggested at the pedagogy course covers important aspects of group tutoring and related problems. Lennéer-Axelson & Thylefors (1991) discusses the psycho-sociology of group work, and I find it especially useful for learning how to cope with conflicts. Jaques (1992) discusses educational methods for improving the quality of group teaching and training. I find it especially useful for learning several things: techniques such as brainstorming and snowball (expectation analysis is discussed by Widerberg 1994); the tutor's roles in his/her interaction with the students, and their effects on group dynamics and evolution; and group evaluation. In addition, Booth et al. (1997) and Jansson (1998) analyse the impacts of the course 'Computer Science and Enginnering in Context' and the underlying project 'D++' on the Swedish education.

What I learned

What I learned from this experience is due to two major sources: (1) the excellent course 'Pedagogy of Group Tutoring' organized by Peter Jansson and Shirley Booth; (2) the interaction with my students. The first source represented a concrete example of how fruitful a group work can be. It also contributed to structure and rationalize my ideas about teaching, which had started to take form about 15 years ago, that is at the time of my first private lessons. The second source was, I believe, fundamental: I learned to learn from my students.

Comparison with a parallel experience

My experience as tutor for the course 'Computer Science and Engineering in Context' was rich and joyful. I had an ideal group of students, the best among all first-year students that I had had in five years of teaching here at Chalmers. The course organization was excellent, a real team work between course organizers, pedagogues and tutors. What else to say?

Parallel to that, I had a painful experience as tutor for the course 'Introduction to Electrical Engineering'. The group of students was on the whole very lazy. Actually, there was a good student among them, but he was shy. So the group was dominated by the lack of internal motivation and the stubbornness of the other students. I did my best to stimulate their enthusiasm and activity, but with poor results. The course organization was, to say the least, chaotic. The recruitment of tutors was completed more than one week after the start of the course. Tutors were not informed about their duties until few days before they were assumed to act. For example, they had to play the role of mathematical 'exercisers' (not tutors) with no previous psychological preparation for that, and with a resulting substantial delay in the start of the project. All the steps of the project were decided by the course organizer without consulting the tutors, who just found weekly instructions for their work .... The list is even longer .... Last, and worst, I had a clear impression that the course organizer wanted to convey the idea that students should pass the exam; this impression was also shared by the students of my group. What else to say? An experience that I would never repeat!

One may wonder whether such a picture is objective or not. How is it possible that two parallel experiences were one so positive and the other so negative? What I can say is that I am not black and white in the way of thinking, and that I have other teaching experiences for comparison. Thus I believe that the picture reflects sharply the contrast between two course organizations, which unavoidably influence the performance of both tutors and students. Viewing such organizations in context and monitoring the opinions of both tutors and students may help these courses to progress towards their important common goal.

How teaching interacted with my research work

When I came back from Italy, I was very excited and full of new ideas. It was the first time that I could stay in my natural environment for more than one month after seven years of residence in Sweden. At the International School for Advanced Studies I had started three important scientific collaborations, one of which together with the Astrophysics Group at Chalmers, and I had planned to complete these projects as soon as possible because of the official end of my position at Onsala Space Observatory. Thus the impact of intensive teaching on my research work was hard at the beginning: I was obliged to

teach in order to earn money for surviving. This was in sharp contrast to my previous teaching experience, in which I had got involved spontaneously. Did anything change afterwards? Yes, definitely! Peter and my students of the course 'Computer Science and Engineering in Context' succeeded to create such a stimulating atmosphere around my role of tutor that I quickly became enthusiastic, even considering my disappointment about the other course. (Now, of course, I feel a bit embarrassed to write such things about Peter because he will read my report, but this is the pure truth.) In conclusion, my research work underwent substantial delays, but I earned an invaluably rich teaching experience.

How teaching interacted with my private life

Outside the academic world, I am a happy husband and father of three children. Apart from an obvious period of stress caused by the initial teaching-research conflict, my family life reflected the satisfaction of being tutor. I was so absorbed in such a role that I proposed a practical project for the week-ends to my family. A brief work plan was ready by the end of November, and the result was the construction of a beautiful Christmas crib. There was no final report :-)

MY NEW LIFE AS LECTOR

Now my children would say: "snipp snapp snut, nu är sagan slut", but the end of that story is the beginning of a new one. This Christmas I have received a surprising present: a tenure-track lector position, which the Swedish Natural Science Research Council will financially support to 80% for three years, that is beyond the start of the new millennium. This means a lot to me: more balance between my teaching and research works, possibly time for popular science, more economical security for my family, and thus a clearer view of my future; in other words, a new life.