Chapter 2
Applying Coaching Practices to Leadership and Team Management Learning in Computer Science:
A Practical Experience

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ABSTRACT

This chapter summarizes the experience of applying coaching techniques to the teaching of leadership and team management, which is taught as part of the project management course in the Computer Science degree at a large public Spanish university. These skills have, until now, been taught through lectures. However, there are some key strengths or abilities that a good leader or team manager possesses, such as the ability to work well in a team, communication skills, etc., which a student cannot learn in a lecture hall. The authors have therefore decided to change the teaching method to one in which the student is converted into the protagonist and the professor takes on the role of the coach, thus becoming a facilitator for the student´s learning process. The classes were organized in workshops, carried out in seminars outside the usual lecture room, and each workshop was dedicated to a specific skill or ability. In the first session, the students felt disconcerted and a little shy and were reluctant to participate in some of the professor´s proposals. Nevertheless, during the five workshops of which the experience consisted,

the students became more participative and were highly contented, and it will therefore be refined and repeated during the next academic year. This chapter provides details of the experience, highlighting the methodology used in each of the workshops, in addition to the conclusions eventually reached and possible improvements that could be made in the future.

INTRODUCTION

This chapter presents an experience involving the application of the principles of active learning (Stemp-Morlock, 2009) based on coaching (Cardón, 2003) to the teaching of the "Advanced Software Engineering" course (from the area of software project management) in the computer science degrees at a large public Spanish university. This experience was particularly focused on the teaching of personal skills, such as leadership and team management, which have traditionally been recognized as playing key roles in software development projects (Pressman, 2010).

The demand for not only technical but also personal skills as the object of teaching in any field has risen in recent years. For example, the area of psychology has, for decades, been advocating the importance of training people in skills related to what Goleman referred to as "Emotional Intelligence" (Goleman, 1996). This necessity is, to a great extent, linked with some of the principles of the new education framework that defines the implementation of the European Higher Education Area (EHEA[1]) which places emphasis on an education that is geared towards competency-based learning rather than the traditional transmission of knowledge (Voorhees, 2001).

The teaching of emotional intelligence is deeply rooted in preschools and primary schools (Petrides et al., 2006), and has been successfully applied in Business Schools for many years (Tucker et al., 2000). We believe that the application of new teaching methodologies of this type will also allow university student's to obtain their maximum potential. And why wait until they are professionals? As with other skills that can be trained (at least up to a certain point), such as languages or sports,

the sooner that individuals begin to develop these skills, the easier it will be for them to do so. In this respect it is worth highlighting the initiative of YPD[2], which aims to develop the potential and the talent of young people and which rests on four pillars: energy, creativity, communication and leadership.

If the training that is aimed at acquiring personal skills and developing emotional intelligence is important in general, then it is much more so for software professionals, who work in a field in which one of the main assets is people and in which emotional intelligence or abilities, such as leadership and team work, are key aspects, as can be demonstrated by the current trends in software engineering such as agile methodologies (Cockburn, 2006) or global software development (Herbsleb & Moitra, 2001).

Goleman himself cites the importance of these skills in IT professionals: "One of the fields in which emotional intelligence curiously has most bearing is in that of computer programming, a field in which the efficiency of the elite who occupy the highest 10% is 320% greater than that of average programmers, which in the case of the 'raraavis' who make up 1% of the total reaches 1,272%!" (Goleman, 1998, pp. 62). Some years ago ACM-IEEE Computing Curricula[3] therefore started to consider the teaching of skills and competences, although the majority of institutions continue to use lectures as the cornerstone of their teaching, supported by digital media at best (Wirth, 2003), even though this type of methodology is not the most adequate for competency-based learning.

Nevertheless, one of the main differences between the educative model represented by the traditional approach and the educative model proposed by the EHEA is the alteration in the

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