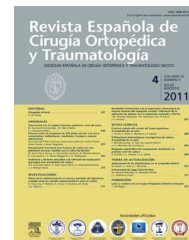




# Revista Española de Cirugía Ortopédica y Traumatología

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## EDITORIAL

### The teaching of orthopedic surgery<sup>☆</sup>



### La enseñanza de la Cirugía Ortopédica

Dr. Forriol has asked me to write an editorial about training in orthopedic surgery. However, upon reflection, I have realized that, despite being in permanent contact with my country of birth and visiting it very often for professional reasons, I am not really aware of how postgraduate training is currently imparted in Spain. Therefore, the following comments should be read whilst bearing in mind that I have been working in the US for the past 40 years. Nevertheless, considering the current trend toward globalization, I am confident that they can be applied to most countries.

There are three, clearly distinguished, periods in this process: teaching during residency, the transition from residency to practice and the maintenance and update of knowledge and new skills. The latter takes place throughout the remainder of our professional lives.

The Accreditation Council for Graduate Medical Education (ACGME) has established that residency programs should focus on teaching six core competencies: patient care and technical skills, medical knowledge, practice-based learning and improvement, systems-based practice, interpersonal and communication skills, and professionalism. These concepts may be complex, but their key objective is to teach and assess three main aspects: knowledge, skill (essential in surgical fields) and professionalism (ethics, interpersonal relations, etc.).

The process of acquiring knowledge has not varied much. It can only be absorbed through the eyes and ears, which means that studying, attending conferences and courses and acquiring knowledge individually through the various means available on the Internet continue to demand time and concentration. It is interesting to observe how the immense majority of available courses follow traditional teaching methods. There have been some attempts to adapt the teaching process to the needs of participants, but there are no measurements of the results of these initial assessments. Similarly, assessments of the effectiveness of these methods

through surveys analyzing the residual knowledge remaining after a certain period of time have not been successful.

The teaching of surgical or technical skills (most medical specialties include “invasive” activities) has been a source of discussion and concern. One cannot learn how to operate without performing operations, but the use of “human guinea pigs” is not justifiable. Teaching how to operate in an environment that is safe for patients has been my greatest concern and I doubt that I have resolved this problem. I believe that there have been notable advances in this field in recent years. Firstly through remote broadcasting of highly complex procedures performed by experts, secondly through courses at specialized centers where participants may operate on cadavers and thirdly through techniques derived from the aeronautical industry: simulations. It is clear that this last method helps to improve surgical times and performance.<sup>1</sup> I believe that, in the future, surgical skills will be completely acquired in a fully or partially simulated environment, with no risks for patients.

Teaching surgical skills entails a risk of turning the acquisition of such skills into the main focus of professional training. Preparing super specialists, experts on a specific technique or procedure, produces individuals who are unable to see the “full picture” and are often incapable of even talking to patients. This is part of a change in the self-perception of orthopedic surgeons that has slowly taken place over the past 25 years. The objective of many residents nowadays is to become experts in a technique or set of techniques. I believe that this current trend is pernicious because it weakens human contact, which is essential in the medical profession. Perhaps, this is partly responsible for the drop in our professional prestige in the US.

This leads us to the third field of training; that of ethics, interpersonal relations and professionalism, all concepts which are difficult to teach and assess, since even specialists find it difficult to define them. ACGME has defined professionalism as the commitment toward compassionate, sensitive, responsible and ethical healthcare. Since there are no parameters for measuring these characteristics, assessments of professionalism are always subjective. On the other hand, it has been argued that ethics and

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professionalism are already established by the time individuals enroll in a residency program. However, there is some evidence which counters that hypothesis and argues that professionalism can be taught and assessed.<sup>2</sup> Some residency programs include conferences on ethics and professionalism,<sup>3</sup> but most of the learning in this field takes place without conscious thought and is influenced by the institutional culture and, frequently, by mentors acting as role models.

The transition from residency to practicing a specialty has not been perfectly resolved in any country.<sup>4</sup> The necessary tests evaluate knowledge, but none of them assess the capacity, or lack thereof, for a surgical discipline. How is it possible that residents are only allowed to operate under close supervision until the day they graduate, but can perform surgery of any level of complexity by themselves on the following day? At some centers, "junior" surgeons go through a period of supervised practice, but this is not common. This situation indicates a certain lack of care at the institutional level which leaves young surgeons vulnerable to failures that can damage their self-confidence, hinder their development and harm their patients.

Maintaining and updating knowledge and new techniques is the domain of continuous medical training. Most developed countries, although not all of them, have a legal requirement to test this update of knowledge, which seems logical; if we must all renew our driving license, if pilots must renew their flying license after a certain time, then our profession, which deals with human life, should also be recertified periodically. This "maintenance" of certification is managed through specialty associations, like AAOS in the US and SECOT in Spain. The range of opportunities available is very wide: from update courses in specific techniques including surgery on cadavers or with simulators, to intensive courses reviewing the entire specialty. In general, each of these courses offers X hours and a certain number of hours is required each year to maintain the certificate as specialist. There are similar courses offered by industry, but their objectives are often very different and, at least in the US, they are rarely valid toward recertification.

Considering that the average professional life of an orthopedic surgeon lasts around 30 years and looking at the changes which have taken place within the specialty in that time, the need for continuous medical training becomes obvious. I could say that, in my current practice, I do not

do anything like I did when I completed my residency, back in the 1970s. Surgeons working in academic institutions are exposed to these changes and are constantly updated without even noticing, but those whose work takes place in isolated centers require periodical updates. In my view, the primary task of the national association of each specialty is precisely that: providing continuous training for its members.

In the US, the main function of AAOS is the training of its current and future members. With a history of over 75 years and a considerable budget, it seems logical that it has become the model institution of its type in the world. Over the past 25 years, its International Committee has extended this training mission to all five continents. The *modus operandi* of this committee has consisted in establishing links with the orthopedic societies of different countries in order to join efforts and improve teaching of the specialty throughout the world. SECOT and AAOS maintain a long and productive relationship, including postgraduate courses taught by members of both societies and numerous works published by authors from both countries. It is worth highlighting that the participation of members of both organizations in training activities is completely free of charge. I believe that, throughout my career, these are the kind of activities that have provided the greatest satisfaction.

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