

The European educational platform on thoracic surgery

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Abstract: As the largest scientific organisation world-wide exclusively dedicated to general thoracic surgery (GTS), the European Society of Thoracic Surgeons (ESTS) recognized that one of its priorities is education. The educational platform designed ESTS addresses not only trainees, but also confirmed thoracic surgeons. The two main aims are (I) to prepare trainees to graduation and to the certification by the European Board of Thoracic Surgery and (II) to offer opportunities for continuous medical education in the perspective of life-long learning and continuous professional development to certified thoracic surgeons. It is likely that recertification will become an obligation during the coming decade. At its inception, the platform differentiated two different events. A 6-day course emphasizing on theoretic knowledge was created in Antalya in 2007. The same year, a 2-day school oriented to practical issues with hands-on in the animal lab was launched in Antalya. These two teaching tracks need further development. In the knowledge track, we intend to organize highly specialized 2-day courses to deepen insight into theoretical questions. The skill track will be implemented by specialized courses for high technology such as tracheal surgery, ECMO, robotics or chest wall reconstruction. In order to promote tomorrow's leadership, we created an academic competence track giving an insight into medical communication, methodology and management. We also had to respond to an increasing demand from the Russian speaking countries, where colleagues may face problems to attend western meetings, and where the language barrier may be a major impediment. We initiated a Russian school with three events yearly in 2012. Contemporary teaching must be completed with an e-learning platform, which is currently under development. The school activities are organized by the educational committee, which is headed by the ESTS Director of Education, assisted by coordinators of the teaching tracks and e-learning platform. Ongoing discussions concern development of contemporary teaching techniques and measure of outcome. The major challenge for the coming years is harmonisation of training and certification in thoracic surgery in the European space.

Keywords: Thoracic surgery; education; life-long learning; certification

Submitted May 09, 2014. Accepted for publication May 13, 2014.

doi: 10.3978/j.issn.2072-1439.2014.05.06

View this article at: <http://www.jthoracdis.com/article/view/2491/3052>

Introduction

At a certain time in the history of any scientific organization, there is a recognizable breakthrough event that will impact its subsequent course. This event can be the founding act of a society when no similar organizations exist “to serve and protect” its future members (1). The European Society of Thoracic Surgeons (ESTS) was no different when the

educational platform was conceived in 2006 (2). A dynamic interpretation of the concept of education in medicine is crucial to the development of societal policies. The ESTS has founded its very existence on the educational platform both for trainees and established consultants; it has been designed to create and promote a common high standard for the quality of thoracic surgery in the pan-European space. In this setting, the underlying philosophy was that

all available resources needed to be prioritized towards the educational aims of the society. In fact, education influences all aspects of the professional development in a medical specialty since it stands at the crossroad of pathways, which may not have an apparent intersection.

The aim of this article was to discuss the reasons why ESTS decided to create an educational platform, to comment on past and present, to introduce plans for further development, and to elaborate on the current and future challenges of education.

Back-ground: the changing identity of thoracic surgery towards a monospecialty

ESTS has been founded in 1993. Over its 20 years of existence, the society has grown and strengthened its position as the leading scientific organisation exclusively dedicated to thoracic surgery worldwide. During the same time span, thoracic surgery itself has considerably evolved.

The identity and perimeter of the specialty has defined itself with increased precision, and thoracic surgery is progressively moving towards the status of a monospecialty in many European countries. This time-trend raised the perceived quest to differentiate general thoracic surgery (GTS) from other specialties in the same domain focused on chest diseases, and hence the necessity of a dedicated and differentiated scientific society for general thoracic, i.e., non-cardiac thoracic surgery.

Its content has evolved as well, owing to the development of high technology applied to thoracic surgery such as minimally invasive surgery, robotics, complex chest wall reconstructions, ECMO, lung transplantation, and others.

However, regulations regarding training and certification still considerably vary according to the different European countries. While thoracic surgery exists as monospecialty diploma in several European countries, it may be linked to cardiac and/or vascular surgery in other countries; it doesn't exist at all in Belgium and Luxembourg! Depending on individual countries, specialist diplomas may be delivered by universities, ministry of health or professional organisations. An ultimate example illustrating how complex bureaucratism can be is France, where the specialist diploma is delivered by the university, while the examination is organized by the National Scientific Society; the licence to practice is delivered by the National Professional Organisation!

The European Union has created a designated body to discuss harmonization of training and certification

issues, advocacy of the medical profession, and mobility of European specialists in 1958. The European Union of Medical Specialists (UEMS) encompasses representatives from national professional organisations from 34 countries, including more than 50 specialties, and representing in fine more than 1.6 million specialized doctors. The different specialties are pooled into sections, themselves subdivided into divisions. Initially, thoracic surgery was represented by two distinct divisions, subordinated respectively to the sections of general surgery and cardio-thoracic surgery. It took up to 2013 to create an independent section of thoracic surgery, which is an important step for the recognition of an independent specialty in the European space.

UEMS has created two bodies to promote quality. The European Council for Accreditation of Medical Specialist Qualification (ECAMSQ) is in charge for definition of duration and content of training, and evaluation of competence. The European Accreditation Council for Continuous Medical Education (EACCME) is labelling live educational events and crediting participants.

In an attempt to harmonize certification beyond inter-European boundaries, UEMS sections have organized specialty boards, which organize certifying examinations. The section of thoracic surgery has created a specific board of thoracic surgery (EBTS), separating from the former board of cardio-thoracic surgery (EBCTS), and offering a yearly examination to young European graduates. Although board certification constitutes a prestigious credential in personal curricula, its specific role for employment or academic purposes is still uncertain since it still has no legal value. Nevertheless, the diploma is a quality label certifying that the successful candidate has acquired the core knowledge and skills required for a European specialist. This labelling should at least promote mobility of specialists. The medium term goal is to convince individual countries to recognize the board examination as the exit examination concluding specialty training.

The strident contrast with the educational system in North America is obvious. In Europe, when we approach the idea of common continental educational pathways, we see the roof of a luxurious mansion only on blue-prints; we know it will attract many potential buyers but we still need to create stable foundations. In the US, the mansion stands solid and efficient, based on the infrastructure and services provided within the American Board for Thoracic Surgery (ABTS) competences; if anything, current difficulties relates to a "slow" market.

Why do we need an educational platform?

In most countries, universities have abandoned education of specialists. Practical training is provided by various thoracic surgical units. There is no existing official definition of the perimeter of a training unit, and there is no obligation to be university affiliated. At least, the ESTS/EACTS revised task force on the thoracic surgical unit has suggested a shortlist with criteria, which have been validated by the UEMS section of thoracic surgery (3,4). Theoretical training has been delegated to national scientific societies. There is also increasing offer of educational events organized by the industry, without direct relation to a university or a scientific society. The quality and objectivity of the latter kind of events are of course questionable, because they are subjected to a considerable conflict of interest. The role of ESTS appears as fundamental within the scope to harmonize specialist education in Europe, and to prepare trainees to the European board examination.

Training of thoracic surgical residents is not the only challenge for education. The life-long learning process, also called continuous professional development, has become a professional obligation for doctors, and it is likely that sooner or later there will be an obligation for recertification of specialists in Europe. Besides the reglementary aspect, rapidly advancing new technologies and silent revolutions such as the advent of VATS lobectomy require adaptation of senior specialists' skills to contemporary techniques.

In this context, it is obvious that ESTS has an obligation to offer a competitive educational platform, answering the double challenge of training specialists and presenting opportunities for continuous professional development. The supra-national organisation of ESTS allows stepping forward in a global process of harmonization and yet allows for assessing feedback from individual countries owing to its network of national regents.

Origins of the educational platform

In the construction of educational foundations, the first issue was to recognize the need to provide both hands-on and theoretical education for surgeons in training. For this reason, the ESTS educational activities have extensively addressed these two points, developing both hands-on and theoretical courses. In 2007, the animal model was the predominant form of surgical exposure in a time when VATS lobectomy started to gain wider acceptance in the thoracic surgical community. As part of educational grants

from industry, ESTS was able to organize lab courses on the pig model at least twice a year in Elancourt, France. Likewise, the theoretical sessions of the ESTS educational platform were held in Antalya, Turkey. The number of courses is modulated on the anticipated attendance. Brochures distributed during major meetings, blast emails and web-based advertising were all used to sensitize the ESTS membership to the educational events. Courses organized on both sites had the UEMS/EACCME approval after careful evaluation of the course programs and submission of declarations on disclosure by all faculty members.

Along with these two projects, the ESTS have developed other educational opportunities: the itinerant courses, traveling fellowships and a committee for research and education (CRE).

Hands-on courses

The opening event of the ESTS Thoracic School in Elancourt (October, 2007) was a demonstration to the attendees (including the ESTS leadership structure and the representatives from all national general thoracic surgical societies in Europe) of future format of the hands-on courses. Indeed, the Elancourt two-day course would entail morning preparatory sessions when indications, techniques and outcomes of thoracic surgical procedures were presented; interactive seminars and videos are extensively used. An interactive discussion would follow to clarify technical points prior to the afternoon sessions dedicated to live lab. An international faculty of experts from both Europe and the US are invited; it includes ESTS members, albeit exceptions for top quality speakers and tutors are often made. A couple of weeks before the courses, participants were also encouraged to fill a questionnaire regarding their technical ability in order to evenly distribute them in theatre. Up to twenty pigs were available and a ratio of 1 animal to 2-3 participants was deemed acceptable to reproduce the standard operative room setting in a dedicated facility for humans. A limit of 50 students per course was set; this limit was successfully reached in February 2011. Since 2011 the number of students has been restricted to 40 to allow all the participants to actively perform the procedures, with a stable ratio of two delegates at each fully equipped operatory table, both at same technical level. All animals were attended by specialized veterinarians who provided one lung ventilation and cared for perioperatively according to current regulations

in France. Moreover, video-clips illustrating the animal anatomical landmarks, best approaches and modalities for specimen disposal were shown to attendees immediately prior to entering the theatre facilities. Hands-on courses were aimed at covering all aspects of thoracic surgical practice, addressing both minimally invasive and open procedures. Only during the first year, procedures like lung transplantation, esophagectomy, chest wall resections, both open and VATS lobectomy were demonstrated to and performed by trainees. In addition, all other aspects of VATS practice were addressed using both disposable and non disposable instrumentation. At the end of the course, a collection of presentations were distributed to attendees along with certificates of participation. Since 2010 a syllabus including the presentations and written abstracts with an updated list of suggested references is also available.

Theoretical courses

The Antalya courses were aimed at providing an exhaustive update on current knowledge on thoracic conditions of surgical interest in the perspective of preparing candidates to sit for the Board exams. Experts from all over the world were selected for their particular expertise in a specific field. A syllabus was created to facilitate the learning experience of trainees who also received summaries and copies of the presentations. The course was administered during an entire week; morning and afternoon sessions were characterized by prolonged interactive discussions. At the end of the week, a final multiple-choice written exam was administered to test the attendees' basic knowledge and compare it to the pre-course text. Moreover, a questionnaire was distributed to participants to evaluate feedback on the logistics and the scientific contents of the Antalya course. Social and permanent interactions between young and experienced surgeons from different parts of the world are one of the most important goals of the School, and offer the opportunity for some kind of tutorial beyond the seminar. A maximum of 50 applications can be accepted.

Attendance to all courses was decided on a first come-first serve basis. Trainee candidates were left free to choose the proper curriculum according to their preference since hands-on and theoretical courses had not been prioritized with respect to the Board exams. In compliance with ESTS policies, several scholarships (up to 10% of the total participants) were made available by ESTS to participating trainees from low-income countries; later extended in number to encourage female gender attendance, these

scholarships covered all costs but travel expenses.

Traveling fellowship

Corollary to this effort, ESTS offered additional travel fellowships thanks to educational support from industry. These fellowship granted observer status to visit high volume thoracic surgical departments in Europe to learn new techniques and become familiar to the most recent technologies (2). Partial financial coverage of costs was anticipated depending on the country of origin of each participant. This program should stimulate, promote and enable mobility of general thoracic surgeons within Europe; it targets both graduates and trainees, offering the opportunity to visit selected European centers for GTS as part of their career developments. ESTS has invited a number of renowned European GTS centers with an annual case load of more than 400 operations to volunteer as hosts of this program. The list of these centers is visible at the ESTS web site with a dedicated web link. Each ESTS member awarded with this fellowship can visit the selected unit for a period of at least five consecutive days.

Itinerant course

The second issue in establishing solid foundations of the ESTS educational platform was to be at the forefront of the recertification process in Europe by ensuring updating hands on courses on emerging techniques for established consultants. In accordance with the same principles of supporting members from low-income countries, itinerant expert courses consisted of offering surgeons at the consultant (i.e., attending) level an opportunity to have full time exposure to procedures recently introduced into clinical practice. Approved in 2008, it was implemented in 2009 with the initial courses focusing on TEMPLA and VATS lobectomy. The common feature of these courses is that they are simultaneously held on the same days (two day course) in two different locations for a maximum of three participants. Once again, ESTS would contribute to cover all costs but travel expenses with three scholarships for each course.

ESTS Committee for Research and Education (CRE)

The ESTS Council has agreed to establish this committee to promote research, scientific and educational activities among members. The decision was approved by the general assembly at the 18th European Conference on General

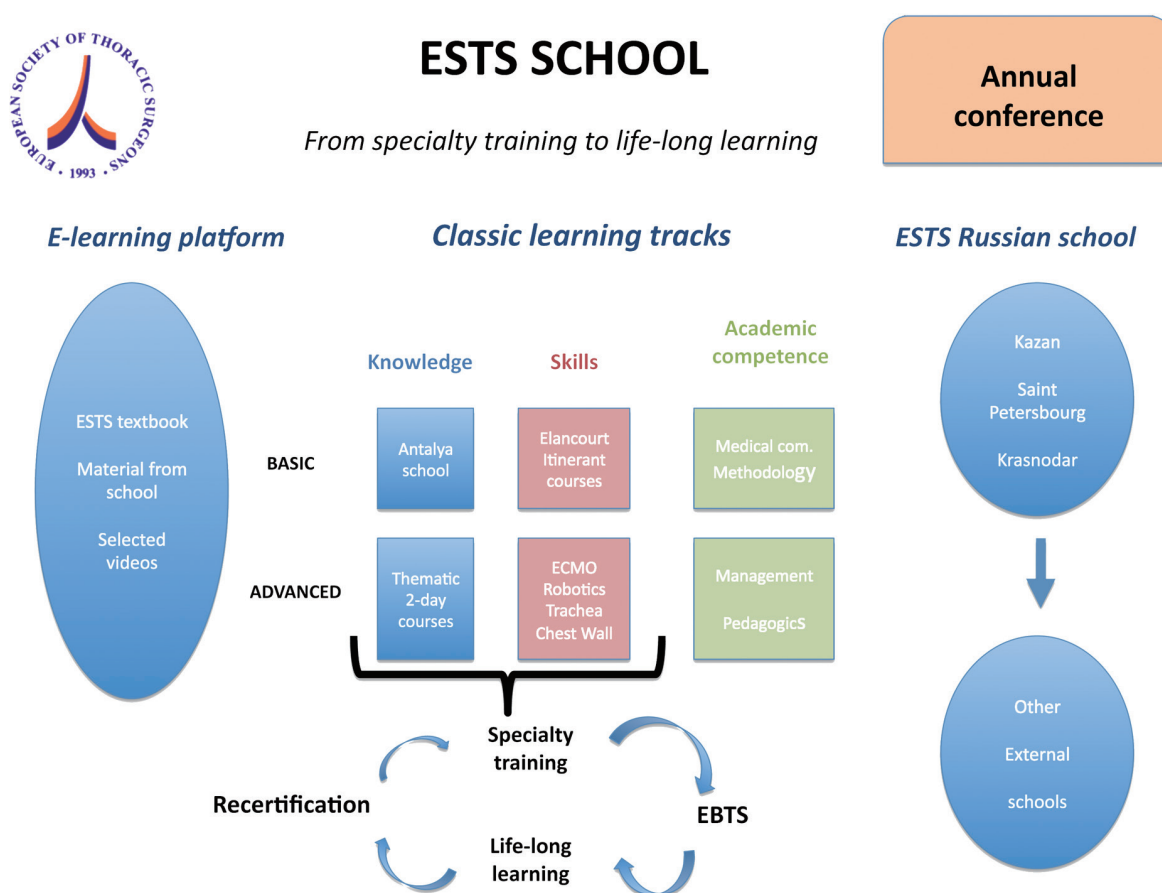


Figure 1 The spectrum of ESTS educational activities.

Thoracic Surgery in Valladolid, Spain, 1 June 2010. The Committee consists of five ESTS past presidents, whereas the ESTS general secretary and treasurer are included as ex officio members. The trustees of the ESTS Charity will have final responsibility of the collected funds. The purpose is to collect funds on the basis of voluntary donations by ESTS members. The aim of the ESTS CRE is to support top class long-term scholarships. The members of the ESTS CRE will select a candidate or candidates based on their application for discussion and final approval by the ESTS Council. The grant will be awarded at the gala dinner at the annual meeting. The names of donating ESTS members will be listed yearly in the list of member book and final program of the annual meeting.

Current developments of teaching tracks

In 2012, the Learning Affairs Committee decided together with the Council that the educational platform needed

further developments, and worked out a business plan for the coming years. The latter has been further validated at a strategic meeting between ESTS officers and directors in June 2013 (*Figure 1*).

Looking at the starting point, we can identify two existing teaching tracks: a knowledge track with the Antalya School, and a skills track with the Elancourt School. Both have progressively improved and professionalized themselves, leaving theoretical discussions for Antalya and practical issues for Elancourt.

However, these two events appear as a basic level for knowledge and skills in the contemporary context. Facing quickly evolving technologies, the skills track needed implementation with specific educational events dedicated to advanced technologies. We individualized four directions for further development: ECMO, robotics, tracheal surgery and chest wall reconstruction. The first course on tracheal surgery will be launched in December 2014 in partnership with the 1st Medical University of Moscow, which is a

national reference centre; this course will combine live surgery transmitted from the OR with lectures and case-based teaching. The ECMO course will be launched in the first half of 2015. Courses on robotics and chest wall reconstruction are currently being elaborated and should be opened in 2015 as well.

Similarly, we intend to implement the knowledge track by an advanced level, in order to provide some in-depth knowledge on respiratory physiology, use of non-invasive ventilation, thoracic imaging and other topics to thoracic surgeons. We are currently discussing a partnership with the European Respiratory Society (ERS) to develop this area.

Offering learning opportunities to thoracic surgical trainees and promote continuous professional development are not the only tasks for ESTS. A major responsibility resides in promoting tomorrow's leadership. For this reason, we have designed a third educational track providing academic competence. The basic level intends to prepare to medical communication and methodology. The first course on medical writing has been launched in April 2014; given its success, it will be repeated in November 2014. We intend to repeat this course twice a year, and to complete it with a methodology course as of 2015. The advanced level will focus on management and pedagogics. The project of a management course in partnership with Leeds University is currently in discussion.

How to meet external needs

Discussions with colleagues during informal meetings at our annual conferences obviated a major interest in educational events in countries outside of European Union. Colleagues from such countries may experience difficulties to attend currently available European educational events not only because of travel expenses, but also because of lacking versatility in English. In 2012, we have launched an externalized school in Russia, comprising three seminars. In January 2012, we met with our colleagues for an inaugural event in Kazan. After a huge success with more than 200 participants, we moved to St. Petersburg in June 2012 for a post-graduate teaching day at the National Congress in Cardio-thoracic Surgery ending up with a similar participation rate. The cycle ended in October in Krasnodar and this event was again marked by an ongoing enthusiasm of the participants. The format of these courses included a combination of direct transmission of live surgery from the OR or anatomy theatre, alternating with traditional lectures. Communication is facilitated by

simultaneous translation. The ongoing success of these events led us to repeat a similar cycle in 2013. We noticed substantial improvements of the educational value with development of thematic seminars, and a progressive shift from presenting personal experience towards teaching state of the art. We also broadened the teaching methods; during the Kazan seminar 2014, we initiated for the first time a wetlab and some case-based discussions. The third annual cycle launched in Kazan in March 2014 will be followed by seminars in St. Petersburg and Krasnodar once again. Improving quality an ongoing success led us to open registration to European participants with a first opportunity offered in Kazan in March 2014.

A second area in focus has been Ukraine. After a very successful school going back to November 2011, the recent political instability has opposed to repeat a Ukrainian school so far.

There are additional contacts in Central Asian and Caucasian countries, and raising interest of potential sponsors for these countries will hopefully help us to develop externalized education.

E-learning platform

Contemporary teaching necessitates development of an e-learning platform. This is a complex task because it requires not only to plan the content, but also to define rules for access. This e-learning platform should not compete with, but complete existing educational events.

Our first options for the content are the ESTS textbook, educational material from the annual conference (in particular morning sessions), and surgical videos. The general rule is that any potential material must undergo a peer review assessing its educational value. Our ambition is to open access by end of 2014, and rules for access are currently under discussion.

Learning affairs committee

Increasing educational activities required some structural reorganisations. The learning affairs committee's structure has been recently revised and validated by the council. As formerly, the committee is chaired by the Director of Education. ESTS officers are members ex officio. The Director of Education is assisted by four coordinators caring for the three educational tracks (knowledge, skills, academic competence) and the e-learning platform; in order to get a feed-back on the educational needs of our trainees,

we added a representative of trainees. The ESTS council has validated the principle of two annual meetings of the LA committee, prior to the council meetings; in February 2014, we had an inaugural first full-day meeting. ESTS council is considering to increase the administrative staff to match with the increasing workload.

Forthcoming challenges

The learning affairs committee will have to face several challenges during the coming years.

The major tasks are to work out a precise definition of the educational content of the basic level for knowledge and skills, which should encompass the core substance we expect from a European graduate in thoracic surgery. Both the syllabus, i.e., a catalogue of teaching items, and the curriculum, i.e., the necessary exposure, will guide the educational offer directed both to specialist training and continuous professional development. We recently got to an agreement with the ERS to launch a so-called HERMES task force on thoracic surgery. The acronym HERMES stands for “Harmonized Education in Respiratory Medicine for European Specialists”. ERS has acquired a solid experience with this type of task forces during the past decade. The inaugural HERMES task force was designed for adult respiratory medicine, which faces structural problems similar to our specialties in the European space (5). It led to the setup of a yearly examination, which is accepted as the specialty exam for Switzerland (6). Several other task forces have followed: paediatric pulmonary medicine, sleep medicine, intensive care, the ongoing project on thoracic oncology for instance. The first step in the HERMES methodology is defining a syllabus. The task-force working group sets up a draft, which is subjected to two Delphi-rounds, where the draft is evaluated and implemented by a panel of experts. Once the working group has agreed upon the syllabus, attention is paid to the curriculum, which means grading of each teaching item and proposal of a minimal exposure. Both syllabus and curriculum, clearly formulate the expected outcome of training, and the task force members can now agree on the tools of student's evaluation. The final step is to define the training unit, which may eventually lead to an accreditation process. Given the advent of new knowledge and techniques, the syllabus and curriculum have to be revised at regular intervals.

It remains a controversial issue to define the length of training. There is no European consensus to this date. Rather than duration, we should focus on outcome.

Indeed, we need to ask ourselves whether the trainee has been exposed to all items of the syllabus, if he meets the requirements of minimal exposure, if he has acquired knowledge and skills, and above all competence, i.e., appropriate use of his skills and ability for adequate decision-making?

Regarding methods of teaching, the ESTS School has proven its endeavour to follow innovative approaches. Simulation techniques with hands-on in the wetlab have been used for 7 years to teach skills. After a successful first event in Budapest, there is a strong interest for further development of hands-on schools in the anatomy theatre. During the next few years, we expect a dramatic development of simulators for VATS and robotic procedures; hopefully, these simulators will be easily accessible by trainees. During our theoretical courses, we stress that classic formal lectures, though interactive, should alternate with case-based teaching. We expect that our new fields of educational offer, the academic competence track and the e-learning platform, will meet some uncovered needs.

Evaluation of teachers and content of teaching programs is currently in practice. This way to proceed is mandatory to improve quality and to fit to the changing needs of the trainees.

The issue of evaluation of outcomes is shared with the European Board of Thoracic Surgery. So far, admissibility to the examination is pronounced after peer-review of the application files. The examination itself consists of an oral interview by a panel of experts with three parts: testing of basic knowledge, clinical case discussion, and critical reading of a paper. Most probably, we will be asked in the future to match with the format used by several other specialty boards. A first part tests pure theoretical knowledge and competence, and is most often run on-line; reasonable options are multiple choice questions, script concordance testing and cases with short questions. The oral examination as second part is offered to those who have successfully validated part 1. As mentioned above, these issues are directly linked to the definition of a syllabus: we need to identify the perimeter of knowledge, skills and competence corresponding to the core substance expected from European trainees.

Obviously, educational activities of any scientific society are regularly in competition with educational seminars organized by the industry alone. Considering events organized by the industry, we may question how independent is the choice of topics and experts; quality is not guaranteed by a peer review process. On the other

hand, scientific societies need funding for their educational activities, whose cost cannot be covered entirely by registration fees. Partnership between scientific societies and industry is the ideal compromise in this debate: industry offers the necessary funding, while scientific societies guarantee quality and objectivity of teaching and expertise.

Conclusions

Education for thoracic surgeons is an exiting area, because it comprises multiple challenges. While specialty training and continuous professional development are obvious commitments, the final goal we should strive at is represented by harmonization of training and certification all over the European space.

Acknowledgements

The authors thank all colleagues who offered their time and expertise to participate as teachers in the various school activities, and thank all students for their enthusiasm and their constructive comments which helped to gradually

improve the educational offer.

Disclosure: The authors declare no conflict of interest.

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Cite this article as: Massard G, Rocco G, Venuta F. The European educational platform on thoracic surgery. *J Thorac Dis* 2014;6(S2):S276-S283. doi: 10.3978/j.issn.2072-1439.2014.05.06