

Quality Management of Medical Education at the Carl Gustav Carus Faculty of Medicine, University of Technology Dresden, Germany

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Abstract

The Carl Gustav Carus Faculty of Medicine, University of Technology Dresden, Germany, was founded in 1993 after the reunification of Germany. In 1999, a reform process of medical education was started together with Harvard Medical International. The traditional teacher- and discipline-centred curriculum was replaced by a student-centred, interdisciplinary and integrative curriculum which has been named DIPOL® (Dresden Integrative Patient/Problem-Oriented Learning). The reform process was accompanied and supported by a parallel-ongoing Faculty Development Program. In 2004, a Quality Management Program in medical education was implemented, and in 2005 medical education received DIN EN ISO 9001:2000 certification. Quality Management Program and DIN EN ISO 9001:2000 certification were/are unique for the 34 medical schools in Germany. The students played a very important strategic role in all processes. They were/are members in all committees like the Faculty Board, the Board of Study Affairs (with equal representation) and the ongoing audits in the Quality Management Program. Students are the only ones who experience all years of the curriculum and are capable of detecting, for example gaps, overlaps, inconsistencies of the curriculum and assessments. Therefore, the in-depth knowledge of students about the medical school's curriculum is a very helpful and essential tool in curriculum reform processes and Quality Management Programs of medical education. The reform in medical education, the establishment of the Quality Management program and the certification resulted in an improvement of quality and output of medical education and medical research.

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Introduction

Germany

In Germany, medical education is an undergraduate programme for which the students applying at the “Zentralstelle für die Vergabe von Studienplätzen” (ZVS);¹ the final admission is primarily based on the grades of the “Gymnasium”. The number of applying students is about 4 times higher than the number of university places available.

The medical study takes 6 years and is regulated by the federal law “*Approbationsordnung für Ärzte*” (ÄAppO).^{2,3} In order to obtain the licence to practice medicine (*Approbation*), the students have to pass 55 major course assessments within the curriculum and 2 state examinations, one after the 2 basic sciences years and one after year 6. An accreditation of undergraduate programmes such as medicine is not compulsory in Germany.⁴

There are 34 Public Faculties of Medicine, 1 Medical

University (Hannover) and 1 Semi-Private Medical School (Witten-Herdecke) in Germany.⁵ Almost all are closely linked with a University Hospital. The Dean of the Faculty has mostly an honorary position. The budget for education and research comes predominantly from the state government, budgets from foundations or Alumni are very rare.⁶⁻⁸ In contrast to research, almost no third party funds are available for education and research in education. Higher education in Germany is free; since year 2006, all Universities can ask for a maximum of 500 € tuition fees per semester (dependent on the decision of the state government).⁹ Depending on the medical school, decision-making on budget is the responsibility of the Chancellor (Kanzler) of the University, the Director of the University Hospital, or the Dean(s) of the Faculty. The amount of budget for the different Medical Schools is not based on the number of students or staff and varies from 70,000 € per student to 300,000 € per student.⁶⁻⁸

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The 3 missions of academic medical centres (Medical School and Hospital) are medical education, medical research and patient care. Therefore, medical education is always influenced by changes in research and patient care. In the past years, new challenges have evolved for medical education: Introduction of Diagnosis Related Groups in patient care¹⁰ and a Federal initiative for Excellent Research Centres.¹¹ The prestige of medical schools, most of the rankings and personal careers are based on the research output (third party funds, publication) whereas the quality of the medical education plays only a minor role. There is, therefore, intense competition about the distribution of the limited budget between and within the Medical Schools.

Dresden

Dresden has a long history of developing and establishing medical institutions. In 1748, the *Collegium Medico-Chirurgikum* has been founded, in 1815 the *Chirurgisch-Medizinische Akademie* followed; in 1901 the Hospital in *Dresden-Johannstadt* was opened, in 1954 the *Carl Gustav Carus Medizinische Akademie* and in 1993 the *Carl Gustav Carus Medizinische Fakultät* was founded.¹² At present, about 300 students are admitted each year with a total of about 1600 students. Eighty professors and about 300 staff members are teaching staff. Clinical education is carried out in the University Hospital *Universitätsklinikum Carl Gustav Carus*¹³ and 15 affiliated hospitals. The budget is about 40,000,000 € and the Dean(s) have the power of decision making for this budget (*Sächsisches Hochschulgesetz* (SHG)).¹⁴ No tuition fees are allowed.⁹

Reform of Medical Education in Dresden

In 1999, Dresden started to reform the discipline-based, teacher-centred curriculum into a modern, interdisciplinary problem-based learning-hybrid curriculum and named it DIPOL® (Dresden Integrative Problem/Patient Oriented Learning).¹⁵⁻²⁸ The reform process was done in alliance with Harvard Medical International and started with year 3 of the course, followed by years 4 to 6 and then years 1 to 2; the reform was completed for all 6 years in 2002. The reform in 1999 was started for the following reasons: a request for a corporate identity and brand name, improvement in rankings, attracting good students, teachers and researchers, improvement in state examinations and length of study. Table 1 demonstrates that the reform process (in combination with QM and certification, see below) led to an improvement in the quality and output of medical education and medical research.

Certification and Quality Management Program (DIN EN ISO 9001:2000)

In 2004, Dresden had to face new challenges – decrease of state budget by almost 30% and an increase of students by 100%. These were the main reasons why Dresden

Table 1. Position of Carl Gustav Carus Faculty of Medicine Dresden in Rankings in Germany

	Position 2007		
	Top (1-6)	Middle (7-25)	Final (26-34)
Education			
Rating by students	+		
Professor's tip	+		
Grade in state examination		+	
Mentoring		+	
Length of study	+		
Reputation	+		
Research			
Third party funds		+	
Number of publications		+	
Number of promotions		+	
Number of habilitations		+	
Reputation		+	

Data shown are taken from national rankings.^{6-8,30-34} The position of Carl Gustav Carus Faculty of Medicine Dresden among the 34 medical schools in Germany is shown in 3 groups — Top group: Position 1-6, Middle group: Position 7-25, Final group: 26-34. Before the reform process, Carl Gustav Carus Faculty of Medicine Dresden was in the final group for all items.

decided in 2004 to undergo voluntarily the enterprise of a Certification of Medical Education and the establishment of a Quality Management (QM) Program after DIN EN ISO 9001:2000. This was done in Germany for the first time and is still unique for the 34 Medical Schools in Germany. The decision was made for the following reasons: elimination of inefficiencies and maintenance/improvement of the ongoing reform process. The QM is based on the mission of the school, it analyses all structures and processes and provides efficient structures, resources and processes for leadership, core and support systems. The following steps were taken: the Dean nominated a QM-authorised representative, existing structures and processes were defined, mapped and described; all steps were extensively discussed and communicated within the Faculty. Process instructions were prepared and summarised in a Handbook.²⁹ At the end of 2005, the certification was successfully achieved. The certificate is valid for 3 years. However, the QM-representative has to perform several internal audits every year and at the end of every year an audit is performed with the external agency. The internal audits focus on structures, processes and teaching elements with inefficiencies and weaknesses.

The introduction of certification and QM had a significant positive impact on the development of the Faculty. It achieved transparency of structures and processes for all Faculty members, it defined responsibilities and

competencies for individual Faculty members, it resulted in an overall improved communication within the Faculty and in training of all teaching personnel in teaching and assessment methods. Furthermore, the infrastructure could be improved for library, literature, e-learning, lecture and seminar rooms; the support was improved for foreign students, the selection and admission process, the definition of learning and educational goals, the evaluation of the programme and the ongoing curriculum reform. The good positions in national education rankings, the attraction of good students, teachers and researchers, the results in state examinations and in the length of study were maintained or improved. Interestingly, the results in national research rankings also improved considerably (Table 1).

Involvement of Students

The students were and are essential partners in all our educational processes. The following points demonstrate the necessity to include students: all professors and teachers want to be well-liked by students, the students know the curriculum from Year 1 to Year 6 and therefore realise gaps, overlaps, inconsistencies in the curriculum (learning goals) and assessment (assessment goals). The students are not involved in the policy of the Faculty and are therefore more neutral. In Dresden, the students are members (by state law) in the following committees: Faculty Board, Committee of Study affairs with equal representation, Appointments Board. Wherever possible, students in all 6 years of the curriculum are involved. The students are selected by the autonomous Student Body. Students participating in the educational reform processes gain experiences in Faculty policy matters and are given privileges in the choice of excellent programmes of the Medical School.

Conclusion

The reform process, certification and QM were and are helpful and essential to improve positions in national rankings (education and research), to increase the number of applications from good students, teachers and researchers, to increase the efficiency of the Faculty and to establish a corporate identity of the Medical School. The students were and are essential partners in all the processes.

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