

# Airlangga University Dental Education System: Present and Future Plan

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## ABSTRACT

Airlangga University Dental Education started 51 years ago on November 10<sup>th</sup> 1954. Since then many changes have been made for a better educational system. The vision of Airlangga University Faculty of Dentistry is to be an independent and accountable institution and to reach the international education standard in dentistry science and technology. Its mission is to educate and teach dentistry with basic medical and dentistry sciences in order to increase the level of community health services in general and the stomatognathic function in particular. The future aims are to do diagnostic preventative research with a predictive medicine approach, and to provide better community health services. The faculty of dentistry has four dental education degrees, which are: Doctor Dental Surgeon (DDS), dental laboratory technician, Master of Science (MS), and dental specialist (e.g. pediatric dentist, oral surgeon etc). Dental education for the DDS degree takes 5 years (10 semesters) with a total of 177 semester credit points. Now the curriculum of dental education is changing step by step to a competence based curriculum. Education and research collaboration with other faculties of dentistry is being conducted including with Hiroshima University.

**Key words:** Airlangga University, dental education, Indonesia

## INTRODUCTION

Airlangga University was founded according to government regulation No.57/1954 and inaugurated by the president of the Republic of Indonesia on November 10<sup>th</sup> 1954. Airlangga University was presented to the city of Surabaya to express appreciation for the sacrifices and merits performed by Surabaya's youth in their independence struggle in 1945. The name of "Airlangga" for the new university was chosen in honor of an Indonesian hero who, at the beginning of the 11<sup>th</sup> century, built a national state covering the eastern part of Indonesia. Airlangga, which means "drinker of water", is the name of a king ruling over East Java from 1019 until 1042. He might have been born in Bali, because when he was born in 1001 his parents reigned over Bali representing the King of Java. After his death (1042) he was immortalized in a statue, representing Airlangga as Batara Wisnu riding the Garuda. King Airlangga used a seal representing the bird Garuda carrying an urn. It was said that urn contained "amrta" the water of eternal life. Those who after

death are given amrta will be recalled to life. Those who drink amrta will live the eternal life. Now 900 years later, we continue to honor Airlangga. And therefore we expect every member of the Airlangga Community always to praise the name of Airlangga and to uphold ideals.

At the beginning of dental education in Indonesia, Surabaya city played an important role. Dental education started when Dr.Lonkhuizen - Minister of the community health department - planned to build a dental school in Surabaya. Dr.RJF Van Zaben the director of NIAS (Nederland Indische Artsen School) was asked by Dr.Lonkhuizen to lead the dental school in Surabaya. The first dental education in Surabaya started on September 28<sup>th</sup> 1928 under the name of School Tot Opleiding van Indische Tandartsen (STOVIT 1928-1942). In the first academic year 21 students studied for 5 years including 3 years clinical education.

Under the Japanese government in 1942-1945, STOVIT was changed into Ika Daigaku Shika. The first director was Dr.Takeda and the second one was Prof. Imagawa. After The Japanese lost in World War II, the Netherland Indische Civil Administration (NICA) governed Indonesia. In 1947 Ika Daigaku Shika changed into Tandheelkundig Instituut (TI) with Dr.JM.Klinkhamer Sr as the director. A year later it changed again to Universiteit Tandheelkundig Instituut (UTI) with Facultiet voor Geneeskunde under the University of Indonesia in Surabaya. History continued, after 9 years Indonesia got independence, Airlangga University was founded by The First President of The Republic of Indonesia Soekarno on November 10<sup>th</sup> 1954. Since then the faculty of dentistry has separated from the University of Indonesia to be a part of Airlangga University. The dental education study period was 5 years long.

The dental education was changed into 6 levels in 1969, but in 1987 the curriculum was revised again to 5 years which divided into 10 semesters. Since then the dental education in faculty of dentistry Airlangga University has used a Semester Credit System. Some revisions have been made to provide a better educational system. The Comprehensive Evaluation System (CES), clinical practicum and community health service experience are the priorities of the educational system of faculty of dentistry Airlangga University. CES is the educational system that conducts the evaluation of study continuously for a semester. It does this through grades and scores for work such as personal assignments, quizzes, mid semester tests and final semester tests, so the students can be monitored continuously.

Clinical practicum and community health service experience are a learning process to understanding the health problems inside and outside campus, in order to make the students ready to provide a community health service.

Now the faculty of dentistry Airlangga University has 4 dental educational programs, which are:

1. Doctor Dental Surgeon (DDS) degree started in 1954. The aim is to educate the students to be a dentist. The education program is divided into 2 phases, which are academic education (Bachelor Dental Surgeon) and dental professional education (Doctor Dental Surgeon) with a total of 177 semester credit points for 10 semesters.

2. Dental Technician Program (Diploma Program). The first Dental Technician Educational Program in Indonesia started in 1984. The educational aim is to educate the students to be Dental Technicians, who have the ability and skill to perform and manage dental laboratory work.

3. Dental Specialist Educational Program. This program has been conducted since 1984 with 7 dental specialist programs, which are pediatric dentistry (pediatric dentist), orthodontics (orthodontist), operative dentistry, periodontics (periodontist), prosthodontics (prosthodontist), oral surgery (oral surgeon), and oral medicine.

4. Master of Science (MS) degree.

Dental education in the Faculty of Dentistry Airlangga University is more than 50 years old now. It has 1.100 students with 204 teaching staff (10 professors, 5 emeritus professors, 25 PhD degrees, 180 Master degrees, and dental specialists in their field) and 153 employees.

## Dental Education Facilities

To promote the dental education process, the Faculty of Dentistry Airlangga University has some facilities, which also promote the students' activities. It has not only main lecture rooms, seminar rooms, laboratory and clinic for dental treatment, a dental library, but also an internet room for students, prayer room, cafeteria and dental suppliers.

The Faculty of Dentistry Airlangga University also has the dental hospital to serve community dental needs and to prepare the graduate to be a professional and skillful dentist. Dental technique laboratories are provided for the pre clinic students.

Community health service is conducted in community hospitals and general hospitals at several prefectures in East Java e.g. Banyuwangi, Kediri, Jember, Lumajang etc. The aim of this program is to prepare the students to be able to solve community dental problems. To promote the community dental health service we have a mobile dental unit. This facility is often used by staff members and the students to do the social work and dental health educational activity in and out of Surabaya.

In order to publish the research reports, case studies and literature studies we have a scientific magazine (Dental Journal) which is issued 4 times a year. The Dental Journal is one of few dental journals in Indonesia which has good accreditation from the Indonesian government. The contributors of the dental journal are not only from the staff members and students of Airlangga University, but also from the other dental faculties in

Indonesia.

## Collaboration with other institutions

The relationship and collaboration with other national and international institutions is conducted to promote the education quality process. It was started in 1959. It started when 12 academic staff members were sent to the University of California to join the USAID educational program. After that, some programs were conducted with the University Hospital in Manchester, Turner Dental School in England, Hiroshima University, Kyushu University, Kagoshima University in Japan, Erlangen & Hamburg University, University of London, New South Wales University, University of Sidney, International Course in Cosmetic & Aesthetic Dentistry in South Jordan Salt Lake City Utah USA, Hereaus Kultzer Hanau Germany and University Kebangsaan Malaysia. Recently we have had collaboration programs with the University of Malaysia and University Sains of Malaysia. In Indonesia, we also have collaboration programs with other national and private Universities and institutions, e.g. Dr. Soetomo Hospital, East Java Province government, Surabaya city government, PTPN XII (persero), Marine Hospital Surabaya and Unilever Indonesia Ltd

## Dental Education System

The vision of Airlangga University Faculty of Dentistry is to be an independent and accountable institution and reach the international education standard in dentistry science and technology. Its mission is to educate and teach dentistry with basic medical and dentistry sciences in order to increase the level of community health services in general and the stomatognathic function in particular. The future aims are to do diagnostic preventative research with a predictive medicine approach, and to provide better community health services.

Dental education is being conducted using a semester credit point system. Semester credit points are used to measure the study content, the success of the students, and to measure how much effort must be made, not only by the students but also by the teaching staff. An academic year is divided in two semesters. Each semester contains 16 to 17 curricular weeks and includes lectures, working in the dental laboratory and dental clinic, public dental health services, research seminars, thesis or scientific writing, and a final semester exam.

The dental education program has two phases of programs, the academic program (147 semester credit points) and the professional program (30 semester credit points).

The academic programs are

1. General lectures (30 semester credit points): Humanities/ Philosophy, Methodology, Ethics and Medical Law (12 SKS), Basic Medical Sciences, (10 semester credit points), Behaviorism (2 semester credit points), Social Sciences (4 semester credit points), English (2 semester credit points).
2. Basic Professional Sciences (53 semester credit points) : Biomedical Sciences (32 semester credit points), Basic Dentistry Sciences (21 semester credit

points)

3. Professional Sciences (57 semester credit points): Clinical Medical Sciences (14 semester credit points), Preventive Dentistry/ Dental Public Health (7 semester credit points), Clinical Dentistry Sciences (36 semester credit points).
4. Thesis (4 semester credit points)
5. Public Work Services (3 semester credit points)

After finishing the academic programs (147 semester credit points), the students receive the Bachelor of Dental Surgeon degree.

The professional programs contain 30 semester credit points. It is a clinical learning experience and field learning experience. After finishing these programs, the students qualify for the Doctor Dental Surgeon degree.

Each student can decide by themselves how many semester credit points they can handle in a semester, after a consultation session with their academic mentor. If at the end of the semester, the student can pass with good grades, they are allowed to take extra semester credit points for the next semester. The number of semester credit points obtained by the student each semester is based on the semester grade index

Semester grade index	Number of Semester credit points
$\geq 3,00$	22-23
2,50 ~ 2,99	20-21
2,00 ~ 2,49	17-19
$\leq 1,99$	12-16

## The Development of Dental Science and Technology in Airlangga University Faculty of Dentistry

The Faculty of Dentistry Airlangga University has specific goals for dental science and technology development. The developments of dental science and technology in Airlangga University Faculty of Dentistry are based on

- a. The change of health paradigm from ill to healthy paradigm toward the predictive medicine era.
- b. The changes of Diagnostic Symptomatic to Preventive Diagnostic, which show the diagnostic technology using hemodynamic, molecular biology, immunology, and psychoneurology. Thus Airlangga University Faculty of Dentistry develops preventive diagnostics using predictive medicine as a special program.

**Preventive Diagnostic** is the diagnostic technology based on not only symptomatic but also the hemodynamic study, thus it could be used to predict the future anomaly, the success of therapy (planning to prevent the anomaly or the unsuccessful therapy).

**Predictive medicine** is the new concept of prediction of the disease in each patient from the profile data with an accuracy of 99%. It predicts the patient's risk and pre-therapeutic risk through the human genome study.

### Preventive Points

The preventive point of the development of dental education and technology in Airlangga University is prioritizing the understanding, development, and application

of preventive dentistry. The priorities are:

1. The development of diagnostic technology using oral fluids, dental tissue and oral tissue as preventive diagnostic materials.
2. Mastering the dento-maxillofacial growth as a basic of preventive malocclusion, and dento-maxillofacial anomaly
3. Technology development of caries vaccine, antiplaque agents, fluor application
4. Mastering the Dental Health Behavior, Dental Epidemiology as one of the basic promotive and preventive dentistry

### Curative points

The curative point of the development of dental science and technology in Airlangga University is to improve the understanding of curative dentistry, and to develop and apply it, e.g. treatment of oro-maxillofacial trauma, congenital defect, neoplasm, orthognatic surgery, and osteodistraction.

1. Mastering and improving the study of bonding agent and restorative materials, laser technology for hard and soft tissue, electronic anesthesia, endodontic microsurgery, aesthetic dentistry, tissue engineering, and understanding its biological conditions
2. Mastering and improving the study of children's fear management
3. Mastering and improving the study of the Oral Health Impact Profile in order to improve the effectiveness of management of dental services
4. Mastering and improving the study of biocompatibility and material tests in order to standardize dental materials

### Rehabilitative point

The rehabilitative point of dental science and technology taught at Airlangga University is to improve understanding, development and application of rehabilitative dentistry.

1. Mastering and improving the study and development of dental materials which are related to aesthetic reconstruction, stomatognathic function reconstruction, social impact reconstruction, and the safety rehabilitative appliance (the materials and the biocompatibility).
2. Mastering and improving the study and development of dental implant and tissue engineering in rehabilitative dentistry

## The policy of Airlangga University Faculty of Dentistry

Airlangga University Faculty of Dentistry as the national research institution, develops and applies dental science and technology, and provides human resources. This institution must be backed up with the professionals and scientists to provide the high quality human resources. Airlangga University Faculty of Dentistry has the obligation to improve dental education, dental research, and dental public health services with up-to-date date science

and technology.

In order to realize its vision to be a dental institution with preventive diagnostic using predictive medicine, Airlangga University Faculty of Dentistry has put together a basic academic plan. That academic plan must be facilitated by the management plan, which always follows the dynamic development of dental science and technology. The harmonious combination of academic plan and management plan is the key to be a high quality dental institution.

## REFERENCES

1. Through The Golden Years - The 50<sup>th</sup> Anniversary of Airlangga University, 2004
2. The development guide of the Faculty of Dentistry Airlangga University 2004-2010
3. The Airlangga University Dental Education Guide 2000-2001