

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.e-jds.com

Perspective article

A pioneer in the paradigm shift of dental education in Taiwan: In memory of Dr. Shwei Kuo (1913–1997)

Feng-Chou Cheng ^{a,b,c}, Chun-Pin Chiang ^{d,e,f,g,*}^a Chia-Te Dental Clinic, New Taipei City, Taiwan^b School of Life Science, College of Science, National Taiwan Normal University, Taipei, Taiwan^c Science Education Center, National Taiwan Normal University, Taipei, Taiwan^d Department of Dentistry, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan^e Graduate Institute of Clinical Dentistry, School of Dentistry, National Taiwan University, Taipei, Taiwan^f Graduate Institute of Oral Biology, School of Dentistry, National Taiwan University, Taipei, Taiwan^g Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Hualien, Taiwan

Received 19 April 2024

KEYWORDS

Paradigm shift;
Dental education;
Dental school;
Career of dentists

The modern medicine and the medical education system for cultivating physicians were first introduced to Taiwan during the Japanese colonial period (1895–1945) and became the important cornerstone of Taiwan's medicine and public health development. With the development of overall modern medicine, Taiwan's dentistry also developed with

the modern technology.¹ However, Taiwan did not establish an education system for cultivating dentists throughout the whole colonial period.^{2,3} It is superficial to think that there was no dental education in Japanese-ruled Taiwan. In fact, by the late Japanese colonial period, Taiwan had developed a vigorous and diverse dental education system.

The content of dentistry might appear as early as 1900 in the surgical subjects of the Taiwan Government Medical School, and became an independent subject in 1918. Taipei Imperial University (TIU) was established in 1928 as one of the nine imperial universities in the pre-war Japan. Its medical faculty was established in 1936, and then the Chair

* Corresponding author. Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, No. 707, Section 3, Chung-Yang Road, Hualien, 970, Taiwan.

E-mail address: cpchiang@ntu.edu.tw (C.-P. Chiang).

Table 1 A brief chronology of Dr. Shwei Kuo (1913–1997) and important dental education events in Taiwan.

Time	The deeds of Dr. Shwei Kuo and important dental education events
Japanese colonial period	
1913.07.18	Dr. Shwei Kuo was born in Lukang.
1916	The Taiwan Physician Order and the Taiwan Dentist Order were announced, confirming that both physicians and dentists were medical practitioners with the legal status.
1924	He enrolled in Lukang First Public Elementary School, Changhua County, Taichung Prefecture.
1928	His family immigrated to Taipei City, and then he attended Taiping Public Elementary School, Taipei City, Taipei Prefecture.
1929	He graduated from Taiping Public Elementary School, and then enrolled in Taipei Second High School, Taipei City, Taipei Prefecture.
1933.03	He graduated from Taipei Second High School (the seventh graduate of this school).
1934.04	He enrolled in Department of Dentistry, Specialized Faculty, Nihon University.
1938.03	He graduated from Nihon University and passed the graduation examination administered by the Ministry of Education of Japan.
1938.05	After returning to Taiwan, he served as a "Deputy Assistant" in Affiliated Hospital, Medical Faculty, Taipei Imperial University.
1938.06	He received the Dentist Qualification Certificate issued by the Japanese colonial government.
1939.06	The business of dental diagnosis and treatment started in Taipei Second High School. He was entrusted to serve as the dentist of this school concurrently.
1940.09	He was reassigned as a "Deputy Assistant" with salaried position.
1943.05	Because the Taipei bombing (due to the World War II) caused serious damage to the hospital's dental equipment, his work was interrupted. Thus, he resigned from his position.
1943.07	He opened and operated a dental clinic in Sanchongpu.
Post-war period	
1945.09.02	Japan officially signed the surrender document, and the World War II ended in the Pacific Theater. When the new government took over Taipei Imperial University (from the end of 1945 to January 1946), the associate professor of dentistry Dr. Heijirou Oohashi was retained as a professor (a retained Japanese teacher) of National Taiwan University (NTU).
1945.10	Dr. Shwei Kuo participated in the founding activities of Taiwan Dental Association and Taipei City Dental Association.
1945.11	He returned to National Taiwan University Hospital (NTUH) as an attending dentist.
1946.10	The dean of NTU College of Medicine, Dr. Tsung-Ming Tu, accepted the advice of American consultant Dr. Harold W. Brown and began planning for the establishment of a dental department in NTU.
1946.10	He was appointed as a lecturer by NTU College of Medicine, teaching dentistry to medical students of NTU, and served as an attending dentist of NTUH concurrently.
1947.03	On or after March 1947, Dr. Heijirou Oohashi was repatriated to Japan.
1947.08	He was promoted to an associate professor and concurrently served as the acting director of division of dentistry of NTU College of Medicine (a teaching unit in charge of dental courses for medical students) and the acting director of department of dentistry of NTUH. The dean of NTU College of Medicine Dr. Huo-Yao Wei appointed Dr. Shwei Kuo to take the responsibility for the establishment of Department of Dentistry in NTU.
1948.02	He received the Dentist Qualification Certificate issued by the Examination Yuan.
1949	The dental school of National Defense Medical Center, which was established in the mainland China in 1941 moved to Taiwan. It is the earliest dental education institution in Taiwan.
1953.08	The Department of Dentistry of NTU was established with approval from the Ministry of Education. It is the first dental education institution established in Taiwan.
1955	He was appointed as the acting director of Department of Dentistry of NTU concurrently.
1955.08	The dental students of the first class of NTU enrolled.
1956.11.12	The Taipei City Dental Association held an activity to commemorate the birth of Dr. Sun Yat-Sen. He received the Dr. Heijirou Oohashi visit.
1957.08	He was promoted to be a professor and was concurrently served as the director of Department of Dentistry of NTU, the director of division of dentistry of NTU College of Medicine, and the director of department of dentistry of NTUH. The dental students of the first class of NTU were promoted to the third grade, and dental professional courses begun in NTU.
1957	The Department of Dentistry of Kaohsiung Medical College was established. He assigned the dental teachers of NTU to assist in the development of its dental courses.
1960	Taipei Medical College and Chung Shan Medical College established their Department of Dentistry in the same year.
1961.07	The dental students of the first class of NTU graduated with a total of 5 graduates.
1964.10	He was appointed by the Ministry of Education as a member of the revision committee of the required course list of the Department of Dentistry of the College of Medicine.

Table 1 (continued)

Time	The deeds of Dr. Shwei Kuo and important dental education events
1972.07	He ended his tenure as the director of Department of Dentistry of NTU, the director of division of dentistry of NTU College of Medicine, and the director of department of dentistry of NTUH, and continued to serve as the full-time professor of Department of Dentistry of NTU and the attending dentist of NTUH.
1975	The bill passed in 1967 for incorporating dentists in Physicians Act was officially implemented to restore the management of dentists at the legal level.
1976	The Department of Dentistry of National Yang Ming Medical College was established.
1980	The Department of Dentistry of China Medical College was established.
1983.07	He retired with honor. After retirement, he still served as an adjunct professor and attending dentists to participate in teaching for dental students and dental care services for patients.
1983.11	The dean of the University of Maryland School of Dentistry Dr. Errol L. Reese came to Taiwan to inspect dental education and suggested that Taiwan's dental education system should develop towards the independent college level.

of Dentistry was established in 1939, launching university-level dental education in Taiwan. In addition to TIU, only Tokyo Imperial University, Kyushu Imperial University, and Osaka Imperial University had the Chair of Dentistry in their medical faculties. Although this was a dental education system for medical students learning knowledge about dentistry, from the old literatures, Taiwan's medical education system already had the records of training dentists to obtain the degree of PhD in medicine in those days.^{2,3} In fact, Taiwan had already developed higher dental education during the Japanese colonial period.

An extraordinary Taiwanese dentist, Dr. Shwei Kuo (1913–1997), promoted the establishment of Taiwan's dental education system after the World War II and witnessed its growth from nothing to prosper. During the Japanese colonial period, Dr. Kuo was a young dentist who studied dentistry in Japan and returned to Taiwan for giving back to the land where he grew up. He followed Dr. Heijirou Oohashi and served in the medical faculty of TIU for 5 years. After the World War II, he promoted and completed the great task of the paradigm shift of dental education in Taiwan and founded the Department of Dentistry of National Taiwan University (NTU). We are indeed honored to have the opportunity to write about Dr. Kuo who is well known and called as “Father of Taida Dentistry” by his colleagues and students. It was almost impossible to summarize such a monumental educational and academic career in a few words, but we tried our best to highlight the most important deeds of this legendary pioneer.

In this article, we collected documents related to the descriptions of Dr. Kuo's deeds as much as possible and screened the important events to make a brief chronology of Dr. Kuo's educational and academic career, and important dental education events in Taiwan, as shown in Table 1. Dr. Kuo was born in 1913 in Lukang of the Central Taiwan. He completed his elementary and high school studies in Taipei City in 1929 and 1933, respectively. Then, he went to Japan for studying dentistry in Nihon University in 1934 and graduated in 1938. After returning to Taiwan, he served as a deputy assistant in the dental department of TIU-affiliated hospital and the dental classroom of medical faculty of TIU. Although his work content and position might be similar to the current teaching assistant, he was the first Taiwanese to engage in dental education of TIU,

and persisted to have this job for 5 years. In addition, in 1939, he was assigned to serve as a school dentist at his alma mater (Taipei Second High School), becoming one of the promoters of Taiwan's school (campus) oral hygiene movement at that time. Because the Taipei bombing (due to the World War II) caused serious damage to the hospital's dental equipment, his work was interrupted. Thus, he resigned from his position of TIU in 1943, and briefly worked as a clinic dentist in Sanchongpu.

By coincidence of history, however, after the end of the World War II, he became the only one with the ability and qualifications to pass on the dental education assets accumulated during the Japanese colonial period in Taiwan to the post-war NTU. It was inevitable that he, with his strong personality, became a firm force to promote the progress of dental profession in Taiwan in the early post-war period. On the recommendation of Professor Oohashi, Dr. Kuo first returned to NTUH as an attending dentist at the end of 1945. In the following year, he was hired as a lecturer by NTU College of Medicine, teaching dentistry to medical students of NTU. It should be noted that this was a very difficult job. Compared with other medical divisions within NTU College of Medicine at that time, he was the only one responsible for all dentistry-related teaching work for medical students. However, Dr. Oohashi soon returned to Japan in early 1947. This means that Dr. Kuo must be on his own and takes the responsibility for teaching all dentistry-related courses for medical students. In this way, NTU College of Medicine went through a seven-year period with a dental division only (for teaching medical students about dentistry) and no dental school (for training dental students to become dentists). As recorded in the plan for the establishment of Department of Dentistry and Department of Pharmacy in NTU College of Medicine in 1952: “For six years since the restoration, our youths have not been able to study dentistry and pharmacy, either inside or outside the island.” Finally, in 1953, the Department of Dentistry of NTU was established with approval from the Ministry of Education, becoming the first dental education institution established in Taiwan. Dr. Kuo was appointed as the acting director of Department of Dentistry of NTU in 1955.

The dental students of the first class of NTU enrolled in 1955 and after 6-year studying in dentistry, finally 5 dental students graduated from the Department of Dentistry of

NTU in 1961. When Dr. Kuo ended his tenure as all the director positions related to dentistry of NTU in 1972, there have already been 12 classes of dental students graduating from NTU. By the efforts of Dr. Kuo and the dental teachers of NTU, Taiwan completed the standardization of required courses for dental students and the establishment of national examination system for dentists in the 1950s and 1960s. As the number of dentists grew, finally, in 1975, the new Physicians Act was officially implemented to include dentists for management at the legal level. Until his retirement in 1983, he served in TIU and NTU for more than 40 years. At that time, Taiwan had already had seven dental schools. Moreover, by the end of 1984, there were 3148 practicing dentists in Taiwan. Compared with the 493 Taiwanese dentists in Taiwan before the end of the Japanese colonial period, the number of dentists had exceeded 6-fold of the original quantity.^{4,5}

Reviewing the development history of dental education in Taiwan, the Taiwan Government Medical School hired Dr. Kaname Ansawa in 1914 to teach the subject of "Dentistry and Clinical Practice" for fourth-year medical students. Dr. Ansawa could be considered as the first teacher who taught dentistry in Taiwan. The Taiwan Government Medical College hired a dentist, Dr. Shizuo Kobayashi, as a dental teacher in 1921. Dr. Kobayashi could be considered as the first dental teacher who really had a dental background in Taiwan. Furthermore, the Chair of Dentistry of TIU was established in 1939, while Dr. Heijirou Oohashi, a dental teacher, was responsible for the teaching of dentistry-related courses for medical students of TIU. Dr. Oohashi could be considered as the first dental teacher who constructed university-level dental education in Taiwan. The Japanese-ruled Taiwan had at least more than 30 years of experience in promoting dental education.^{2,3} As Dr. Oohashi said when he recommended Dr. Kuo to Dr. Shu Yeh who was responsible for the work of taking over the medical faculty of TIU when the new government took over TIU, the general idea is that in the Japanese medical education system, every discipline has its own traditions. Anyone who comes from any discipline hopes to maintain their traditions. Therefore, Dr. Oohashi hoped that Dr. Kuo, who received his training as a more qualified dentist, could stay in NTU to maintain their own traditions of dentistry.^{6,7}

In January 2023, the number of practicing dentists in Taiwan increased to 16,533.⁸ In recent decades, the career of dentists has been favored by our social value system due to the characteristics of high income and high quality of life in the dental profession.^{9,10} This must be attributed to Dr. Kuo who previously laid a good foundation for the dental profession in Taiwan. Undoubtedly, he was the first dental teacher in NTU after the World War II. He is a pioneer in the paradigm shift of dental education in Taiwan. He inherited the traditions of dental education accumulated during the Japanese colonial period, took over the extremely difficult task for the paradigm shift of dental education, and finally

completed this difficult but valuable work. Dr. Kuo is undoubtedly one of the most famous dentists and dental educators in Taiwan. Many of us will be forever grateful to Dr. Kuo for his encouragement and support in our dentists' careers. Nevertheless, it is even more worthy of mention that Dr. Kuo is devoted to dental education but not to other dental specialties that guarantee a high income. His humility and achievements are indeed not only an inspiration but also a role model for our younger generation of dentists.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Acknowledgments

We are grateful to the family of Dr. Shwei Kuo for their assistance during the writing of this article.

References

1. Cheng FC, Wang LH, Ozawa N, Wang CY, Chang JYF, Chiang CP. Dental technology of Taiwan during the Japanese colonial period. *J Dent Sci* 2022;17:882–90.
2. Cheng FC, Wang LH, Ozawa N, Chang JYF, Liu SY, Chiang CP. Development of dental education for medical students in Taiwan during the Japanese colonial period. *J Dent Sci* 2022;17:903–12.
3. Cheng FC, Wang LH, Ozawa N, Chang JYF, Liu SY, Chiang CP. Dental education and special dental practitioner-cultivating system in Taiwan during the Japanese colonial period. *J Dent Sci* 2022;17:920–7.
4. Chen YY. Dental school and dentist. *Magazine of Chung Shan Medical College* 1985;32:42–9 [In Chinese].
5. Cheng FC, Wang LH, Wang YL, Chiang CP. Overview of the dental specialist system in Taiwan. *J Dent Sci* 2023;18:1909–11.
6. Professor Shwei Kuo Foundation. *Special issue of Professor Shwei Kuo's 100th birthday thanksgiving meeting*. Taipei, Taiwan: Professor Shwei Kuo Foundation, 2013 [In Chinese].
7. Cheng FC, Wang CY, Chiang CP. The historical context of the establishment of the department of dentistry of national taiwan university. *J Dent Sci* 2024;19:736–40.
8. Cheng FC, Lin TC, Wang LH, Lin WJ, Lee MC, Chiang CP. The relationship between graduation school background and geographical distribution of dentists in Taiwan. *J Dent Sci* 2024;19:1147–56.
9. Cheng FC, Wang YL, Wang LH, Chang JYF, Liu SY, Chiang CP. Overview of dental education system and gender distribution of undergraduate dental students in Taiwan. *J Dent Sci* 2023;18:420–7.
10. Cheng FC, Chang JYF, Chiang CP. A gentle force to complete a great education plan of oral pathology in Taiwan: in memory of Dr. Hsueh-Wan Kwan (1923–2022). *J Dent Sci* 2023;18:1965–7.