



Correspondence

A formative course for research proposal writing and international talent cultivation at the beginning of the dental graduate program



KEYWORDS

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The dental education for the dental students encompassed various aspects of teaching, primarily including medical knowledge and clinical techniques.¹ Beyond the undergraduate education, the dental students could pursue the master's and doctoral programs to engage in more specialized and advanced studies.^{2,3} In addition to the critical thinking, creativity, and problem solving, the graduate research projects should be in-depth within different fields. Fundamental learning in a master's program included literature review, research design, statistical analysis, academic writing, and many others to cultivate the growth of a researcher.⁴ Among these, the research proposal writing served as the foundation of any research project. Identifying relevant literature topics and synthesizing research findings were the primary learning objectives for every graduate student. There is no exception for the field of dentistry. By analyzing the current research landscape, the students could propose innovative topics to enhance the appeal of their research.⁵ Therefore, based on the past teaching experiences, this study developed a course to guide the dental graduate students into the research field. By utilizing the extensive resources of the library and incorporating the international expert lectures, the course broadened the students' academic perspectives.

The course entitled "oral research skills" spanned 18 weeks and was primarily designed for the students in the master's program of dentistry, as shown in [Table 1](#). The primary objective was to enable the dental graduate students to quickly grasp oral clinical and fundamental research skills, efficiently utilize the literature and available resources, define the appropriate research topics and directions, and design the suitable experimental methods. At the beginning of the course, the senior graduate students shared their experiences in entering the research field, providing the newly coming students with a reference framework to help them to integrate into the research environment more efficiently. The following sessions focused on the journal and literature search strategies, where the students learned to use software tools to organize and synthesize the key literature findings, research methodologies, and conclusions. To provide the students with a clearer understanding of the research process, the course invited the professors and doctoral students with independent research expertise to discuss how to explore and design the research topics. Through learning from the previous researchers' experiences and reviewing the literature, the students formulated their topics of interest. Under the guidance of the faculty members, the students worked on drafting their preliminary research background. To broaden students' research perspectives and expose them to the research characteristics from different regions, the course also invited the international research experts to teach how to integrate the clinical medicine into research. This allowed the students to connect with the international research communities and explore the potential collaborations. However, each student had slightly different research focuses, research directions, and methodologies. The course grouped the students into different research fields and invited the faculty members specializing in those fields to provide their guidance and feedback.

Table 1 The course schedule and syllabus for the course entitled "oral research skills".

Week	Topic	Outline
1	How to prepare a research proposal?	Course introduction
2		Graduates sharing their experiences in the master's program
3	Research methodology instruction (library instruction)	Literature collection and management, including PubMed biomedical database, and EndNote reference management software
4		Introduction of techniques for searching SCI journals and using Turnitin for originality checks
5	Research journey sharing	Discussion of the transition from the fundamental research to the translational and clinical studies, including human trials
6		A doctoral student sharing his research experience
7	Academic writing methods	Introduction of academic writing methods
8	Midterm examination	Students completing their research background writing for the midterm examination
9	International expert lecture (I)	Dental clinical practice and research covered (USA)
10	International expert lecture (II)	Dental clinical practice and research covered (USA)
11	Research proposal and discussion	Expert keynote speeches and student research proposal discussion and feedback took place (1)
12		Expert keynote speeches and student research proposal discussion and feedback took place (2)
13		Expert keynote speeches and student research proposal discussion and feedback took place (3)
14		Expert keynote speeches and student research proposal discussion and feedback took place (4)
15		Expert keynote speeches and student research proposal discussion and feedback took place (5)
16	International expert lecture (III)	Dental clinical practice and research covered (USA)
17	International expert lecture (IV)	Dental clinical practice and research covered (USA)
18	Final presentation	Students completing their final presentations

Through the thematic presentations, the students were encouraged to demonstrate their learning progress, exchange feedback with peers, and improve collectively. By the end of the course, the students completed their research planning reports, gaining a preliminary understanding and preparation for their future research endeavors. This structure fulfilled the course objective of guiding the students into their research, learning, and exploration.

The fundamental research training was a crucial step in shaping students' academic journeys. How to efficiently guide the students into different scientific research areas within a limited two-year timeframe and help them to complete their research projects remain a challenge for the educators. Ultimately, this course aimed to contribute to the dental education by cultivating more professionals into different scientific research areas.

Declaration of competing interest

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

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