Examine Past Literature with Care to Explore and Verify the Research of Today
About Professor Ming-Tsang Wu

Dr. Ming-Tsang Wu is a professor at the Department of Public Health, Kaohsiung Medical University (KMU); the director of the Graduate Institute of Clinical Medicine; the director of the Research Center for Environmental Medicine and the chief doctor at the Community Medicine Department, Kaohsiung Medical University Hospital.

The number of papers he has published since he was a Ph.D. student at Harvard School of Public Health up until today, during which he has worked at various institutions, is over 190. His main areas of academic expertise include molecular epidemiology, public health, environmental and occupational medicine, and community medicine. His research interests are clinical/community epidemiology and translational medicine. He has received the Outstanding Research Award from Kaohsiung Medical University for 10 times. Dr. Wu was the director of the Office of Global Affairs, during which he visited sister schools on behalf of KMU numerous times, providing its students with the opportunity to learn and connect with the world. The sister schools include the Harvard School of Public Health and the University of Arkansas for Medical Sciences. Professor Wu is still a visiting scientist at Harvard University, and through the “KMU-Harvard Alliance” Foundation, KMU has received, for 12 consecutive years, students from the Harvard School of Public Health to take its course Field Experience in International Occupational Health and Safety, a 2.5-credit course approved by the Harvard School of Public Health. So far, 103 graduate and Ph.D. students from the Harvard University and more than 200 graduate students from KMU have taken the course.

Always examines with care earlier literature, for the sake of exploring and verifying today’s research and experimental processes and results.
**The importance of researching for comprehensive information**

Nowadays, Taiwanese students mostly stay in their country to receive their education, unlike in the past, where students tended to study overseas and acquire the western ways of learning, namely asking questions and conducting proactive research. Many western countries like the US have abundant library resources and thus, when it comes to research, students there have access to comparatively more resources. Therefore, most teachers who used to study abroad can truly appreciate the importance of access to comprehensive information when conducting research. Dr. Wu is currently also a visiting scientist at Harvard University, and since he was able to access the abundant resources at Harvard University's library even when he was a student, he seldom encounters the problem of insufficient resources. However, most of the schools in Taiwan either have incomprehensive resources or resources that are not completely digitalised. Thus, researchers and students often end up with insufficient information in the course of their research. Moreover, with the decreasing number of Taiwanese students studying abroad, students in pursuit of an academic career are less likely to acquire the comprehensive, complete and proactive ways of learning. Therefore, the teachers who have completed their studies abroad should shoulder the important responsibility of leading the students in this aspect. In this digital age, students who are unable to find the necessary articles (sometimes what they find may be old literature) may turn to search engines or Wikipedia for information, which can significantly undermine the accuracy of their research.

**Conducting research from a medical scientist’s perspective and verifying past research**

Take Professor Wu’s research on secondhand smoking and cervix cancer for example. Since he was a Ph.D. student at Harvard University, he could access all the publications on cervix cancer and became familiar with the subject. With regards to environmental factors, most of the cervix cancer cases were caused by smoking, as smoking undermines human body’s immunity, and thus facilitates the development of cervix cancer cells. Another reason is that the substances that enter into the body due to smoking may induce the development of cervix cancer cells. However, since the female smoking population in Taiwan is small, Professor Wu thus inferred the connection between the environmental factors of secondhand smoking as well as the cooking oil fume generated by frying at high temperatures and the development of precancerous cervical lesion at later stages. He found out that due to poor ventilation in the kitchen, the risks of cervix cancer have become associated with women who have never smoked, and published many relevant articles on this subject.

Furthermore, Professor Wu is currently engaged in researching on how the presence of melamine in the environment affects the health of the human body. Melamine came under the spotlight because of the incident of poisonous milk powder in China. Though in fact, it is not uncommon that people encounter melamine in their daily lives. For instance, products, such as bowls and plates, made from melamine resin contain melamine. These products are inexpensive and durable, and so, they are widely used by restaurants. However, melamine dissolves at approximately 50°C. Using LC/MS/MS precision instruments, melamine can be detected in urine samples. To this end, Professor Wu conducted a follow-up research on patients with urolithiasis and found that the condition may be closely related to people’s frequency of dining out. So he started to explore this issue and eventually, he found out that the melamine in melamine resin products could seriously affect health.

In fact, there had already been some early research on melamine resin cups made from melamine and formaldehyde entering food simulating solvent. Therefore, in order to gain deep insight into a research, comprehensive researching and understanding are key.

For example, the article published in 2011 by Professor Wu in Elsevier’s Journal of Hazardous Materials titled High melamine migration in daily-use melamine-made tableware was the result of comprehensive research and understanding of earlier publications on melamine.

Professor Wu sees research from the perspective of a medical scientist, that is, he conducts research in clinical settings as well as employs evidence-based medicine. He is dedicated to researching on epidemiology in connection with the factor of environmental and genetic interaction, and he employs the research methods of epidemiology to investigate the subject. He studies the fields of applied sciences that are closely connected to public health, and always examines with care earlier literature, for the sake of exploring and verifying today’s research and experimental processes and results.
Leading students to cultivate the learning attitude of pursuing comprehensive knowledge

Since today’s scopes of research place great emphases on cross-disciplinary cooperation, the achievement of success lies in easy access to relevant information. Particularly since medical universities have responsibilities both in academic research and clinical service, the comprehensiveness and sufficiency of information are paramount to both researchers and students. This rings true especially in this digitalised and information-led age. A lot of information can be found on the internet, yet only a comprehensive academic library resource can provide access to accurate and reliable information, ensuring that users are less susceptible to information gap or discrepancy. In this regard, teachers also have the important responsibility of instilling the practice of using correct information and the right research methods into students, so that students form the habit of acquiring comprehensive knowledge of the cause of a disease or the methods of experiment. Only through this way can students become proactive in their learning and pursuit of knowledge.

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