

## LETTER TO THE EDITOR

# Embracing Big Data in Medical Education in Malaysia: Overcoming Challenges and Seizing Opportunities

Syahrul Nizam Junaini<sup>1</sup>, Keng Sheng Chew<sup>2</sup>

<sup>1</sup> Faculty of Computer Science and Information Technology, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

<sup>2</sup> Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia  
Email: syahruln@unimas.my Tel: +6082 583817

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Dear Editor,

The increasing volume of data generated in the medical field presents both opportunities and challenges for medical education in Malaysia. On one hand, the data allows for the development of genomic and precision medicine (1). However, it also raises concerns about data ownership, potential hacking, and the lack of a centralized electronic the local medical record.

To begin, the velocity and variability of data transfer and processing can affect medical education in Malaysia. The speed of data transfer and processing enables the use of Online Analytical Processing (OLAP) for remote medical consultation and multi-center medical conferences and case discussions (2). However, the lack of high-speed infrastructure such as 5G connections (such as in rural Sarawak), can widen the urban-rural divide in terms of access to medical care.

Meanwhile, evaluating the value of data is also crucial. Medical students must learn how to distinguish useful data from noise. Understanding data value helps them to use it more effectively, leading to better patient care and informed decision-making.

Additionally, the diversity of multimedia data in various specializations of medicine must be considered. For example, dermatology requires more pictorial data, while surgical fields require video data. However, analyzing advanced medical multimedia data from sources such as Augmented Reality (AR), Virtual Reality (VR), or even Metaverse, requires specialized tools and skills.

Furthermore, the validity, veracity, and viability of data are crucial in using big data in medical education (3). Ensuring the accuracy of data and its analysis is essential for the rapid development of drugs and pharmaceutical

products. However, the volatility of data requires medical students to adopt a lifelong learning mindset in order to ensure the viability of their knowledge.

Lastly, the vagueness and vocabulary of data are crucial in using big data for medical education. Therefore, it is essential for medical students to learn the basics of data science to correctly analyze medical data and ensure proper use in the field.

In conclusion, the use of big data in healthcare will continue to grow, and it is crucial that medical students are equipped with the skills and knowledge related to big data. Medical educators must also be aware of the challenges and opportunities presented by big data and take steps to incorporate it into medical education in a responsible and effective manner.

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