



Moving Toward Fourth-Generation Universities: Practical Steps beyond Digitalization

RAMIN MAZAHERI NEZHAD FARD^{1*}, PhD; MARYAM YAZDANIZAD², PhD Candidate

¹Department of Pathobiology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran; ²Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

*Corresponding author:

Ramin Mazaheri Nezhad Fard, PhD;

Department of Pathobiology, School of Public Health, Tehran University of Medical Sciences, Keshavarz Blvd., Pour Sina St., PO Box: 1417613151, Tehran, Iran

Tel: +98-21-4293 3208; **Email:** r-mazaherinf@sina.tums.ac.ir

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Dear Editor

Nowadays, innovations in the educational structure of academic institutions are rapidly growing. The speed of this process is shaping the future of universities. In general, first-generation universities are totally focusing on education, while second-generation universities provide education and research. Third-generation universities further consider entrepreneurship and commercialization of the knowledge generated. Fourth-generation universities have wider roles and are further involved in social and economic necessities (1). Digitalized and online learning programs can support this transition. However, several universities, especially those with financial and structural limitations, still follow education-only or education-research models. Although good progress has been made to pass to the next generations, still there is a long way to achieve this goal. While it seems that the most applicable solution for this problem includes extensive use of digital teaching and learning tools, other available solutions can be used to pass to the next generations. In this letter, we discuss two practical steps beyond digitalization: wider research collaborations and better application of the knowledge generated, especially for universities with financial and international limitations.

One of these less frequently used solutions is moving beyond limited research disciplines and developing multi- and inter-disciplinary research plans. Although these two terms are sometimes used as alternatives, there is a clear difference between them. Multidisciplinary research includes experts from various disciplines who study on similar subjects but keep their activities separate, while interdisciplinary research includes a closer relationship and greater integration between the disciplines. This can be carried out through regular meetings between various research teams, where researchers openly brainstorm ideas and troubleshoot common problems (2). International collaborations with well-established centers may lead to better scientific achievements at the institutional level (3). However, due to serious obstacles in this regard, such as international sanctions, high expenses, and limited funding sources, collaborations at national and local levels can greatly help (4). Another solution for filling the gap is linked to the application of the generated knowledge, which can be achieved through close relationships between universities and industry. Briefly, one of the fruitful outputs of academic research can be the commercialization of some research results (5). In our view, public presentation of the created knowledge can make research findings further understandable and accessible.

In general, these two steps are practical ways to help universities move toward the next generations. Multi- and inter-disciplinary collaborations can help universities make better use of their research capacities. Furthermore, closer relationships between universities and industry can help academic knowledge used in experiments. For universities with financial limitations or limited international collaborations, local and national research networks may be an easier start point. However, since science never ends, the so-called 4th generation should not be considered the final generation. Thus, what roles should we correspondingly play in this field? The answer clearly includes involvement of all the players, containing researchers and administrators as well as decision makers. Relatively, ultra-structures should be established and sufficient funds should accessibly be provided to support research collaborations and knowledge transfer. These efforts may gradually improve the scientific, social, and economic roles of the universities.

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Conflict of interest

The authors declare no conflict of interest.

Declaration of AI

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