

# Blended Learning of Pediatrics in Iraq Amid the COVID-19 Pandemic: Lessons Learned and Recommendations

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The coronavirus disease 2019 (COVID-19) is a serious infection caused by severe acute respiratory syndrome coronavirus 2. As the disease has spread from the Wuhan region of China in late December 2019 to many parts of the world, the World Health Organization has declared a pandemic in March 2020. Up to October 22, 2021, there have been 242 348 657 confirmed cases, including 4 927 723 deaths.<sup>1</sup> Among its numerous harmful effects, the pandemic has driven a myriad of challenges to medical education worldwide.<sup>2</sup>

The pandemic has affected the population in Iraq. By October 23, 2021, 2 045 027 COVID-19 cases and 22 937 deaths were registered in Iraq.<sup>3</sup> To avoid the discontinuation of medical education amid the quarantine and lockdown measures in Iraq, online learning was introduced during the academic year 2020. Many challenges have been faced during online learning of pediatrics in Iraq, including disrupted infrastructures, particularly disturbed electricity power and slow internet services, time limits, absence of institutional strategies, inability of students to undertake assessments necessitating clinical exposure, and defective competence of the teaching staff to develop and deliver online content as well as the poor technical skills in a substantial number of students and their negative attitudes toward online learning environments.<sup>4</sup>

With the easing of tight restrictions in Iraq, blended learning (BL) was introduced during the academic year 2021 as an innovative solution to the challenges observed during the introduction of online learning on one hand and sustaining the medical teaching in the continuing era of the COVID-19 pandemic on the other. This form of learning, which combines face-to-face learning and online learning using suitable learning platforms, has rapidly grown to be commonly employed in education. It emphasizes the learning outcomes rather than the process of education. The effective implementation of BL largely depends on various variables such as the student characteristics, learning climate (social environment), and performance expectations (cognitive factors).<sup>5</sup>

In Iraq, fifth and sixth (final)-year students were allocated to learn pediatrics. They were grouped to follow a timetable of 3 days for online learning and 2 days for face-to-face learning per week. Each group of fifth-year students followed a pediatrics course for 3 weeks compared to 8 weeks for the final-year students. During online learning, google classroom (Google, LLC, Mountain View, Calif, USA) was utilized by teachers to deliver audio-visual lectures, educational medical videos, and images on various topics in pediatrics. Students were actively taken part in online discussions on materials presented by teachers. Students were asked to present seminars on selected topics in pediatrics and they undertook regular online formative assessment as a part of the in-process evaluation of the students' comprehension, medical knowledge, learning needs, and academic progress during the course. During the face-to-face learning, students made clinical attachments with patients at the pediatric hospital under the close supervision of teachers. Various pediatrics cases were presented by the students, and active discussion was set on bedside clinical approach and management. To avoid the risk of acquiring and transmitting COVID-19 at the hospital, students and teachers followed the guidelines of physical distancing and used personal protective equipment. The assessment of the clinical competence of students was accomplished using the objective

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structured clinical examination as it is a reliable, comprehensive, and objective test. Summative assessments were done at the end of each course to assess the student's learning progress and provide the grades of the pass/fail decision. Regular feedback was taken from each group of students at the end of the course to assess the learning objectives and process and faculty teaching approach as well as gauge the students' performance and scoring.

The challenges of BL implementation in pediatrics faced by the students and teachers were found to be manifold. Students felt demotivated by the disrupted schedules. They reported difficulties in self-directed learning as scheduled by the teachers, and huge cognitive load with engagement issues as well as concerns with personal interest, career up-gradation, differing teaching styles with conflicting views causing confusion, and social interaction related to the difficulties in interaction with teachers and managing group dynamics. Both teachers and students agreed on the low teacher: student ratio, institutional issues related to the constrained infrastructures, time limit, inadequate administrative support, and financial affairs.

Few lessons were learned from BL implementation in Iraq. Despite the various challenges observed, students generally responded well to this form of learning. Clinical education seemed well-suited for BL, combining the best aspects of both online and face-to-face collaborative learning. Moreover, using BL has driven students' engagement, achievement, and positive perceptions of learning as well as the capability to self-pace and self-direct. Though teachers were able to provide teaching materials to students, few have had formal competency in educational approaches and technologies. Teachers need to shape their teaching skills and enhance better interaction with students.

We, the faculty members of the Department of Pediatrics at Al-Kindy College of Medicine, University of Baghdad, are arranging to evaluate BL at the end of the academic year 2021 to explore the real magnitude of problems associated with its implementation and the needs of the stakeholders, including students as well as the appropriateness and continuity of BL should the COVID-19 pandemic persists.

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