The Appeals and the Limits of Digital Education in the Post-Covid Era

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Though shifting to online teaching and learning has been a persistent trend for the last two decades, remotely delivered teaching has become a pervasive and ubiquitous worldwide phenomenon during the COVID-19 pandemic. There is no misgiving that the staggering impact of COVID-19 on education sector will cement e-learning as an indispensable ingredient of the traditional teaching and learning system. The intensification of the shift to digital teaching and learning is alleged to have the potential to reduce educational costs, diminish bargaining leverage of faculty and teachers' unions in the education sector, and enhance learning capacity of students. Contrary to the views of ardent exponents of online teaching and learning, it can be demonstrated that e-learning neither reduces educational costs nor can it undermine the bargaining leverage of faculty and teachers' unions.

Online delivery of education is believed to have provided a golden opportunity to significantly reduce educational costs. The pathways to the realization of low educational cost through digital teaching and learning are; increasing student-teacher ratios (increasing enrollment in each section of a course since there is no spatial limitation), transferring certain educational activities to computers, curtailing salary costs by redesigning processes that would facilitate an effective and efficient utilization of teacher time, reducing school-based facility costs, and realizing economies of scale by leveraging initial development costs as widely as possible (Bakia, et al. 2012; also Morris, 2008).

Generally, the potential cost-saving of online delivery of both public and private services is massive (European Commission, 2016). Governments and businesses have seized this opportunity to reduce both administrative and transaction costs, and hence improve their service delivery performance. A good quality education combined with promoting equity is a sine quo non to a well-functioning, stable and productive society (OECD, 2012). Therefore, cost efficiency should not be the only factor taken into consideration when educational reforms are undertaken. Furthermore, education is a unique good whose quality assurance requirements can hinder the achievement of cost efficiency associated with the economics of scale. In other words, cost efficient delivery of services might be difficult to realize in the education sector.

As an opportunity to reduce salary costs, increasing the student-teacher ratio purports to be an attractive and tantalizing option to school administrators. However, this policy option runs counter to maintaining quality assurance standards in educational institutions. In addition to a robust digital infrastructure, incessant IT support for faculty, and the need for teachers to be skillful in using technology, lowering student-teacher ratio is one of the most significant factors that can ensure maintaining quality assurance for online courses (Bates, 2019). There is a general consensus that class size is positively correlated with the quality of interaction between teachers and students (Burch, 2019). In their study of faculty's attitudes toward online teaching, Lowenthal Patrick et al (2019) have found that it was the strong conviction of faculty members under study that smaller online classes were conducive to fostering student learning and faculty satisfaction. Furthermore, they found out that "some faculty perceive high-enrollment online courses as antithetical to student success" (p.65).

The student-teacher ratio is a significant indicator of the level of resources devoted to education (OECD, 2007). In fact, one of the main impetuses behind the inclination of many parents to send their children to private schools is

class size (National Council of Teachers of English, 2014). Despite their differences in their methodologies, a significant number of researchers have agreed that an optimal class size for an online university or college course should range from 8–20 students (Burch, 2019). Such an optimal class size requirement which is imperative to maintaining quality assurance standards, can hardly culminate in curtailing salary costs. In fact, educational institutions might be required to hire more teachers if they decided to shift to online teaching.

Within the higher education literature, economics of scale is widely identified as one of the propelling forces behind the accelerating move to digital teaching and learning (Morris, 2008). Higher educational institutions are in a position to digitize education and extend their students recruitment reach to the global level. In accordance with the application of economics of scales to online learning, large scale organizations such as universities can achieve economies of scale by developing processes and systems that permit additional growth at marginal cost (Morris, 2008). Once new sections of a given course are added, the growth of enrollment revenues will soar faster than any cost related to adding additional sections. It is based on this anticipation of efficiency gains that many higher educational institutions are enticed to devote substantial levels of resources to the development of online courses.

However, there are certain substantive obstacles to the achievement of economics of scale in the education sector. These structural and institutional constraints to the realization of economics of scale in the education sector are the corollaries of the prevailing governance structure in higher educational institutions. In line with the existing institutional governance model, faculty members not only participate in governance but also enjoy academic freedom, which generally refers to the freedom that faculty members have in teaching and conducting research in order to explore and disseminate knowledge that contributes to the common goods of society. The institutionalization of academic freedom which has historically been buttressed by collective bargaining mechanism, provides greater latitude for faculty members in determining the design and content of courses that they teach (AAUP, 1994).

Similarly, the design of online courses which has a significant impact on student performance, is mainly shaped by faculty members who are assigned to teach online courses (Jaggars & XU, 2016). Since different sections of the same online course are taught by different faculty members, there will inevitably be significant variation in learning outcomes, textbooks, and other reading material requirements. As result of such a unique faculty specify approach to learning and pedagogical philosophy, total costs will increase rather than decrease for educational institutions (Cini & Princeas, 2014). Other things being equal, the lack of a centralized and unified teaching and learning model is a source of inefficiency, and hence an obstacle to scaling online education. Put simply, schools and higher educational institutions are not manufacturing facilities where through the application of assembly line and use of skilled and semi-skilled workforce large scale standardized goods can be produced. As Theocharis Kromydas has pointed out:

Education is not similar to a manufacturing production line, since students are highly concerned about the quality of education they receive as opposed to motor cars, which are indifferent to the process by which they are manufactured (2017, 2).

The institutional constraints to the achievement of economics of scale in relation to online learning and teaching cast doubt on a widely held assumption that the shift to digital education will corrode the pillars faculty and teachers' unions power base.In his assessment of the fateful ramifications of distance education for teachers' unions, Terry Moe, the author of *Special Interest: Teachers Unions and America's Public Schools*, has asserted that digital revolution will bring a massive cost saving substitution of technology for labor, and hence, fewer teachers per student will be needed (Moe, 2011). Moe has gone further to argue that technology-driven dispersal of teaching force has the potential to engender formidable and insurmountable challenges for faculty and teachers' unions to maintain their social cohesion which is a preclude to displaying their bargaining power to elicit concessions from school administrators. Moe has therefore, concluded that online teaching makes it difficult for teachers to gather in one physical location and hence undermining their ability to organize, which he characterized as "a big blow to their power (2012).

Moe purports to have ignored two important points. First, it is a pure fantasy and self-deception to suggest that enlarging enrollment in a single online class which is intended to save costs and hence reduce the number of teachers, can guarantee maintaining quality assurance standards. Second, if technology can allow many students

across different geographical settings to enroll in online courses, faculty and teachers' unions can also utilize the same technology to retain their organizational cohesion and solidarity through holding large scale virtual conferences and meetings. If physical space is no longer a requirement for learning and teaching as Moe has asserted, then physical presence of teachers in a specific location is no longer an indispensable condition for maintaining organizational solidarity and cohesion.

It is indisputable that technology can be utilized as an aiding and facilitating tool to learning and teaching. However, technology can never replace teachers. It would be a fatal flaw to expect technology to substitute the knowledge and life experience that effective and emphatic teachers can transmit to students (Owen, 2015). Furthermore, teaching is relational since positive teacher-student interactions are an essential ingredient of students' learning experience. As Andreas Schleicher (2020) has pointed out, "COVID-19 has reinforced the notion that learning is not a transactional experience but a relational and social experience, and that assessment must guide student and system improvement" (para.4).

Furthermore, Victoria Cain and Adam Laatts (2021) have convincingly argued that historical experience with the use of technology in education system in the United States has shown that technology is "a poor solution to teacher shortages". Cain and Laats have also reminded policy makers that:

In the present as in the past, they [policy makers] will get only what they pay for. Technology can be a tool for teachers and students, but it cannot replace the role of a trained, engaged human teacher. As parents have come to appreciate during the pandemic, in person teaching inspires students far more than Zoom school ever will. In person, teachers can connect and engage with students that screens cannot simply replicate (para 18).

The enthusiasm of the advocates of e-learning tends to overcloud and obfuscate institutional and structural barriers to the achievement of the economics of scale in the education sector. There is no doubt that technology can be harnessed as a useful tool at the service of teaching and learning. However, technology is an appendage to effective teachers not vice versa.

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