Reframing Education Delivery and Assessment During and After the COVID-19 Pandemic

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Abstract: Traditional education has assessed students' achievement of course learning outcomes using grading metrics. Although online learning has existed long before the COVID-19 pandemic, face-to-face learning has been the traditional and preferred instructional delivery method. The COVID-19 pandemic has caused educators to develop new ways of delivering instruction with the added element of public health as a newly prominent focus. As a result, new opportunities for student learning have emerged, but the challenge of measuring student engagement in what may continue to be a remote learning environment remains. Assessing student learning during and after the pandemic should involve determining the learner's involvement with the course. The standard learning measures of grading and quantitative student feedback surveys remain relevant, and the addition of a qualitative measurement would improve the understanding of the students' experience. This qualitative assessment would capture additional data to allow educators and administrators to gain a broader awareness of students' needs, achievements, and strengths.

Key words: engagement, learning, assessment, qualitative, quantitative, health, hybrid, hyflex

1. Introduction

The COVID-19 pandemic disrupted many traditional educational practices. Institutions, educators, and students quickly realized that the conventional learning paradigm was unsustainable in terms of public health. This realization caused each group to question educational practices within the context of their respective realities. A literature review revealed that questions surrounding education were global, and scholars from many nations reflected similar issues with two common themes: delivery and assessment. The pandemic changed learning and education profoundly. Now that teaching and learning norms have changed, educational practice cannot return to its former state. Educational delivery and assessment are at an inflection point, and the future of education must include innovative technologies and consider the needs of educators, institutions, and students.

2. Pre-Covid-19 Education Practices: Keep, Change, or Discard?

Classroom education has traditionally been a passive activity for students: The instructor delivered an oral presentation, students listened and completed required work, and then the instructor issued a test to measure student

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understanding of the content (Ranaweera, 2021). The COVID-19 pandemic brought these traditional methods into question. "In early April 2020, statistics reported that approximately 1.6 billion, or 91.3% of learners in 188 countries across all levels of education globally were negatively affected by the compulsory school closure as a result of the lockdowns" (Sasere & Makhasane, 2020, p. 181). Face-to-face learning may be optimal in terms of quantifying student engagement and achievement of learning outcomes (de Borbo, Alves, & Compagnolo, 2019; Finnegan, 2021; Gay & Betts, 2020; Hanafi, Jumaa, & Arafi, 2021). However, schools found themselves unable to deliver course content using traditional methods due to health concerns. Course delivery switched to a primarily online delivery system, disrupting the norms of in-class teaching and learning outcomes assessment to which instructors and students conformed.

Technological advancements available in 2020 created the opportunity for a shift in the paradigm of educational delivery. Without the physical boundaries of the classroom, professors and students could access digital tools that shifted students from a passive to an active role in their education. This shift created a new normal focused on educational value for the student (Glantz & Gamrat, 2020). The location where the education occurred mattered less than the student's engagement with and understanding of the material. Schaffhauser (2021) noted that the shift to online teaching highlighted the value of in-person education and the importance of time in a shared physical location for instructors and students; however, the transition to online learning fundamentally altered the way teaching occurs.

In addition to redefining instructional practices, educators needed to reconsider existing evaluations of student learning. Zhao, Lin, Liu, Zhang, and Yu (2021) commented on using existing, primarily quantitative student assessment methods, noting that some may have become obsolete with the change in educational practice resulting from the pandemic. The use of in-person tests and was not simply unachievable — it was a health hazard. While that may sound extreme, knowledge of COVID transmission methods was merely unknown at the outset of the pandemic, and instructors were wary of accepting physical testing devices. Public health concerns were and continue to be a significant consideration and complete disruption to the education system. The World Health Organization (WHO) and the Center for Disease Control (CDC) defined parameters on daily living such as wearing a face mask and social distancing. Before federal and state guidance existed, schools made individual decisions regarding students' ability to remain on campus and instructional delivery during the remainder of the pandemic. Without compromise, educators acted with student and personal safety in mind to limit the spread of the virus. However, through that time investigating ways to continue participation in the already-in-progress semester. In retrospect, the chance of contracting COVID by touching a student's paper submission may have been less than was feared. However, the transition to alternative learning methods served two purposes: It kept educational stakeholders as safe as possible and explored opportunities for new, often innovative, assessment methods.

One instructional delivery and assessment used during the early parts of the pandemic was asynchronous course delivery. Asynchronous delivery, in which the students and instructors may access the course at any time without needing to be present either in person or online simultaneously, was one of the techniques attempted. Öztürk (2021) noted both the benefits and deficiencies inherent to asynchronous learning:

- Students could complete work during their preferred times and integrate their learning within the context of their family and work life, as opposed to making their life fit within the learning frame.
- Students had the opportunity to explore topics in as much depth as they chose, allowing for flexibility in achieving learning outcomes.
- Students could gain independence in their learning, therefore developing lifelong learning skills.

However, learners did not always reap these benefits because of asynchronous learning. Öztürk (2021) also

noted a perceived lack of support and motivation among students because of the decrease in shared learning spaces. Access to courses became a function of using the internet. For some learners, the lack of internet access created learning disruptions. Schools adapted through innovative means such as providing connections through school buses that contained WiFi hot spots and directing students to access points to continue their learning. The adaptation to the temporary, new "normal" caused educators to evaluate many aspects of the students' learning experiences and their teaching practices.

Al-Freih's (2021) phenomenological work with teachers who shifted to online instruction noted the need to change teaching processes abruptly, sometimes forcing instructors to learn new technology in an emergency mode. Instructors had to find ways to engage with students using sometimes unfamiliar online platforms, limiting organic classroom discussions. Teachers found it necessary to rework course assignments and classroom activities to fit the computerized platform and establish new norms of classroom participation. The use of asynchronous courses caused student engagement to be challenging, and teachers' attention to struggling students' motivation involved additional energy in a way not previously experienced. Nonetheless, teachers found ways to engage students, such as extended one-on-one times with students and innovative technological use of apps and internet resources.

As the world continues during the pandemic with an expected return to "normal" within the foreseeable future, some old teaching methods, assessment, and student engagement will inevitably fall away. The imperative of colocation of teaching and learning has diminished. Teachers and students could be in separate physical locations, if necessary, without significant disruptions to the course learning outcomes. Innovative practices involving hybrid learning are in use, evolving for future utilization. HyFlex teaching methods, in which the student may attend either in person or online, allow educational stakeholders to feel safe in their choice of educational delivery. The puzzle of student engagement and fulfilment of the social aspects of learning remains in question.

3. The New "Normal" of Educational Delivery and Student Assessment

Postman (1995) commented on the intangible quality of learning, noting the need to find motivation and purpose in the effort. Postman's comments were jarring at the time of his writing: How could education be reduced to two simple needs? What about in-class experiences and long-held beliefs of the benefits and rituals of geographically situated school participation that society held dear? Would education devolve into chaos without the boundaries of time and space? Each of these questions was at the forefront of the collective consciousness as the need to separate physically for safety reasons became apparent in the early days of the pandemic.

Daniel (2020) noted that a return to established educational norms would likely not occur because of the flexibility discovered during the pandemic. Although society may eventually collocate safely, the proverbial pandora's box of newly available instructional techniques, internet-based connections, and the opportunity to emphasize educational purpose over location has been opened and cannot be closed. "Asynchronous working gives teachers flexibility in preparing learning materials and enables students to juggle the demands of home and study" (Daniel, 2020, p. 93). Both educators and learners can enjoy this opportunity to suit their needs. Woldeab, Yawson, and Osafo (2020) pointed out how higher education has been available online for years. The economic need for institutions to reduce costs is more evident now than ever before. Natow (2021) pointed out that colleges have had to adapt to shifting financial circumstances for decades. The COVID-19 pandemic forced schools to turn to online course delivery to continue instruction and remain economically viable. Daniel (2020) commented that the shift to online classes involved teachers who were subject matter experts but not necessarily technologically proficient.

Herein lies the problem: Schools needed to deliver the same content but had to use new, often unfamiliar technology — and engage students using said technology. Although Glantz (2020) noted how many students were able to transition to the online learning environment, the ones who did not make the shift as successfully — or at all — became at risk of falling behind in their learning. Gonzalez (2021) commented about the transferability of educational practices from the classroom to technological platforms, noting the lack of availability and accessibility for some students and the amount of work necessary on the teacher's part to emulate the classroom environment without being able to share space. The challenge, which seems simple to people not directly involved in classroom teaching, is that electronic classroom replication is impossible. The sense of being in a shared space with an exchange of ideas and knowledge is not and cannot be identical to an electronic meeting because of the differences inherent to each type of learning space.

One factor that has been effective in teaching online is the instructor's attitude toward the use of technology. Woldeab et al. (2020) noted how faculty comfort and support when using learning technology were crucial factors in a positive online learning environment. Zajac and Lane (2020) continued this idea by highlighting those teachers who exhibited a positive and caring online presence had more successful online teaching experiences. Acts of caring, kindness, and flexibility directed toward students made the online classroom experience as positive as possible for students (Zajac & Lane, 2020), an idea that is common to both the traditional and the online classroom experience. The difference between the two formats is that body language and tone are easier to communicate and interpret in person but require deliberate effort in an online format. Furthermore, as influenced by the learning environment, the teacher's attitude affects student learning and assessment performance.

Gamage, Silva, and Gunawardhana (2020) commented on the assessment of student learning. In a traditional setting, formative and summative assessment practices occur in conventional fashions. The transition to online learning made both types of assessments more challenging in terms of delivery and integrity. Thankfully, newer online tools (e.g., Padlet, Kahoot, etc.) could facilitate formative assessment and promote student engagement. Summative assessment became more challenging, and student "sharing" information for the summative evaluation became easier (Gamage et al., 2020). The question then turns to effective assessment methods to sustain educational integrity and prove mastery of learning outcomes during and after the pandemic.

4. Assessment Quantity VS. Assessment Quality

Some teachers use few points to assess student understanding, which creates a high-stakes testing environment that could be stressful for teachers and learners alike. Other instructors prefer to offer multiple assessment points to promote an environment with many data points to measure student attainment of course learning outcomes. While each assessment method has its merits, the challenge is to determine what could be the best in an online format. Morales, Posso, and Florez (2021) found that all assessment points are significant student performance indicators. Finnegan's (2021) research concluded that students perceived time pressures and other intervening variables such as computer access limited their ability to perform optimally on assessments. Bagheri and Zenouzagh (2021) completed a study and found that online (aka computer-mediated communication) courses limited students' requests for assistance during assessments, which could have impeded their performance. In other words, the lack of the student's ability to ask questions and technologically based challenges could negatively impact the student's performance.

These findings lead to an interesting problem, especially in large educational institutions during online instruction: To what extent is personalized learning available for students? It is easy for a student to become a person in the crowd who is not always personally known by their teachers at large institutions. Lewis, Heath, Li, and Roberts (2021) commented that the students need to be personally known to their teachers. One of the most poignant comments that emerge from Lewis et al.'s (2021) work was the following passage:

> Because I feel like someone is noticing my work. I didn't feel controlled… I felt motivated because someone is noticing that I'm there, I'm trying to figure it out, I'm trying to listen to the video to do the practical. I'm doing this for me to have a better understanding, but someone else, my lecturer, my tutor, is noticing this. I'm not a number. I'm someone to them (p. 31).

For students in a large classroom, especially online, it can be challenging to make a personal connection with the teacher. Furthermore, students occasionally use the anonymity of the online environment to evade the teacher's attention. For other students, the teacher's attention during and after an assessment is vital because it makes the learning more personalized and relevant to their educational process. Farrell and Brunton (2021) noted that teacher engagement with students is commonplace in a traditional classroom but takes on a different meaning in an online class. Crawford et al. (2020) reminded us that although the access to technology may differ among countries, the use of the available resources is critical, and student performance connects to teacher engagement. The teacher's engagement with the student offers support and personalization, leading to richer student engagement and later demonstrating learning outcomes better.

The literature points to the need for higher quantity and quality of assessments in an online classroom. Teachers must create rapport with each student and use multiple assessment points to ensure a positive experience and successful attainment of learning outcomes. Hew, Jia, Gonda, and Bai (2020) found that students whose teachers required the use of cameras during online learning sessions reported more engagement in the course because, despite the isolation, they could feel as though they were part of the course. For assessment purposes, having the students' cameras on during online sessions offers another assessment point because it becomes easier to know who is engaged during discussions. The interesting facts about student engagement via a camera during class sessions are that teachers may not need to add more assessments but could include the on-camera engagement as a formative assessment of student learning. Additionally, the idea that both students and teachers may need more time with online teaching for this type of assessment to become comfortable (Sasere & Makhasane, 2020).

The assessment of student learning needs review in an online class. The idea of online engagement, preferably by a camera but also in online discussion boards, needs to be considered an assessment piece. By assessing student engagement, students could become more sensitized to the need to be "present" in their classroom interactions, which is a relevant skill they may need later in life. Second, online engagement is a significant factor in student learning because the student's interactions with the teacher affect their academic performance. This enhanced student-teacher engagement is a factor that will be a prominent part of teaching as the world makes its way through the pandemic. Furthermore, it could create additional learning delivery methods that may not have existed before the pandemic, such as access to courses and collaboration despite geographical location. As an assessment piece, the attenuation to engagement and presence in an online setting is a skill that could transfer from educational to professional settings.

5. Delivery and Assessment: During and Post-Covid-19

The COVID-19 pandemic has forever altered educational delivery. In many ways, the traditional ideas of pencil

and paper may ultimately become obsolete, although they are still relevant skills in certain academic levels and disciplines. UNESCO (2019) noted that changes to educational delivery and implored educators to consider the possibilities of technological integration in learning design, noting that "human interaction and collaboration between teachers and learners must remain at the core of education" (p. 5). As educators responded to the public health and safety needs at the outset of the pandemic, the rapidly adopted shift to electronic delivery, while necessary, may be unsustainable because it removed the physical interaction between teacher and the learner. It is wise to consider UNESCO's reminder because that human interaction, while facilitated by technology, cannot be entirely replaced without impeding the one-to-one aspect of the learning process.

Learning assessment faces similar challenges. Fuller, Joynes, Cooper, Boursicot, and Roberts (2020) questioned the "why" and the "when" of assessment and urged consideration of decisions made during the chaos of the pandemic response. Permanent changes to an assessment made during this pandemic may not be the optimal course over the longer term. Fuller et al. (2020) urged the use of lower-stakes assessments to retain the personalized aspect of learning. Online learning contains many elements of personalized learning and has proven to be highly effective when using a student-centric model. Titarenko and Little (2021) noted the potential for enhanced international learning but commented that personalization must exist for the learners to achieve success. The overwhelming theme that has emerged during the pandemic is the need for compassion in designing learning and assessment, both for learners and teachers.

The use of online technology has opened a world of possibilities for teachers — sometimes overwhelmingly so — and mastering the use of new resources and technologies may not be universally available yet. It has also increased educational access for students who may not otherwise engage in traditional education. With these new learning opportunities comes an enhanced ability to measure and improve student engagement and make more meaningful connections that could influence student abilities. A point of caution in using these technological opportunities is to remember the need for interpersonal interaction and engagement, the imperative of academic rigor, and the consideration of the quality of the learning environment. The institution, faculty, and students must create a safe, effective, and balanced learning environment that benefits each group. The way to accomplish these outcomes would involve a 360-degree approach (Agyepong, Owusu-Ansah, & Annoh, 2021) to ensure a viable and sustainable system. Refinements, such as open-ended questions for various stakeholders to reflect on their perspective of the learning experience, could offer insights into individual experiences. These refinements could inform the process of shifting from pre-pandemic course delivery and assessment techniques to new, sustainable, and richer learning experiences.

6. Conclusion

The COVID-19 pandemic highlighted a demand for innovative technologies in education and a heightened awareness of stakeholder needs. The return to traditional educational methods may no longer be practical after the pandemic concludes, as reflected by scholars from various countries. The way forward must include a sustainable and compassionate consideration of student needs, instructor abilities, and broader compassion for each group's challenges. It is time to embrace these aspects of education to create a sustainable future that includes technological advances and personalized instruction. Most importantly, it is now time to abandon the old-fashioned model of life bowing to educational demands and for education to fit within the realities of people's lives.

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