On-Campus, Virtual, Blended, and Triple Systems of Teaching-Learning: Fitness and Relevance for Private Universities in Bangladesh

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In the transition to the post-pandemic phase, the blended teaching-learning modality seems to be a good solution for universities. But the post-pandemic paradigm seemingly calls for a triple-system of classes, i.e., on-campus classes, blended teaching-learning, and virtual classes separately under separate plans and schedules. The paper explored a clear-cut conceptual understanding of the concepts of "virtual classes," "blended teaching-learning," and "triple-system of classes." The study contributed a comprehensive framework with teaching-learning modalities, especially for private universities in Bangladesh, in the pandemic period, the transition to the post-pandemic period, and the post-pandemic paradigm. It also developed a robust model for blended learning.

Keywords: blended, triple-system, fitness, relevance, theory, teaching-learning, virtual-class

INTRODUCTION

The current round of research on the impact of the COVID-19 pandemic on higher education institutions (HEIs) focuses on how to start on-campus classes at HEIs amid the world's long-term coronavirus pandemic fluctuation. Many HEIs around the globe closed their physical operations and classes in the spring 2020 semester, while many universities started classes virtually. Until the end of the spring 2021 semester, no corner of the world got most universities reopened, even for a limited scale of operations.

Universities started reopening progressively across the globe from April 2021, while China and Japan in Asia and some Nordic countries, including Denmark and Norway, were ahead of others in this instance. At the same time, governments in many parts of the world implemented a country-wide lockdown, the deadline periods of which were extended several times to encounter the rising and fluctuating situation of

the COVID-19 pandemic. In such a global context, many universities around the globe completed the summer 2021 semester with live-online or real-time virtual platforms.

Preparing for the return to university is increasingly getting the priority attention of higher education institutions (HEIs) across the globe, even though timelines vary depending on the pandemic situation in each region or country. A well-organized strategy for reopening universities is essential to help prevent harm and ensure the health and safety of the university community. In addition to taking appropriate preventive measures, university buildings, facilities, and business modalities may need to be structurally modified to make them fit and relevant to the contextual change. Most importantly, programs and teaching-learning modalities may require adaptation to make them tailor-made for the new situation.

The spirit of structural contingency theory (Thompson, 1967; Lawrence and Lorsch, 1967; Mintzberg, 1979, 1989) and population ecology theory (Hannan and Freeman, 1977) underpins such structural change and the transformational requirements of teaching-learning modality for HEIs. According to the structural contingency theory, "the best way to organize is contingent on the environment" (Galbraith, 1973). Organizations adjust their structure to make themselves fit and relevant to the context. Organizations are open systems-oriented, and their decision-makers tend to be rational and efficiency-oriented (Talukdar. 2020).

Additionally, as per the population ecology theory, "organizations and environments are tightly coupled." The environment ultimately controls the change process. The environment is dynamic and unpredictable. Relative inertia in structural change characterizes organizations (Talukdar, 2020). The populations of organizations have a specific character. Environmental change and new social conditions affect the rates at which new organizations and new organizational forms arise, organizations get changed, and organizations and organization prototypes die out.

Taking these theoretical frames into consideration, the study examines which teaching-learning modality could be appropriate for private universities in Bangladesh in the transition to the post-COVID-19 time and post-pandemic paradigm. Additionally, the article analyses the state-of-the-art teaching-learning methods and expands the horizons by constructing an emerging learning method and by forming an interconnectedness between these methods. The study also calls for a new theory building on the teaching-learning modality with appropriate assumptions, principles, analysis, and justifications.

STUDY METHOD AND JUSTIFICATION

The epistemological position of this study is fundamentally a constructivist view of knowledge. Additionally, it appreciates linking perspective to worldviews. The study comprehends "critical realism," "scientific realism," and "nave realism" from the epistemological positions of Spencer et al. (2003). The former denotes that knowledge of reality is reconciled by individuals given communal perceptions and beliefs. Scientific realism means knowledge is in proximity to external reality, while the latter means reality is perceived through the senses.

The study followed a qualitative synthesis method. Qualitative synthesis includes numerous methods for the synthesis of qualitative studies. Contemporary development of synthesis methods for qualitative research is seminal and has encompassed diverse custom-made approaches, e.g., meta-ethnography, grounded theory, thematic synthesis, textual narrative synthesis, meta-synthesis, meta-narrative, critical interpretive synthesis, focused synthesis, ecological triangulation, framework synthesis, and "fledgling" approaches. This study employed a tailor-made focused synthesis method.

Focused synthesis implies collecting and documenting information and data from a range of focused sources, including published and unpublished documents, memorandums of the study entities and unit of analysis, and consultation with relevant stakeholders (Talukdar, 2012 & 2020).

The justification of this study's focus on private universities in Bangladesh is the contextual and structural differentiation between public and private universities in Bangladesh. But this study's findings and the outcome might be relevant for many other geographical regions of the globe as the study is based on a unique problem—i.e., the disruption caused by COVID-19. The research for this paper was designed

in July 2021. Relevant contents, literature, established studies, information, and data were collected in September 2021, while the final paper was written in October 2021.
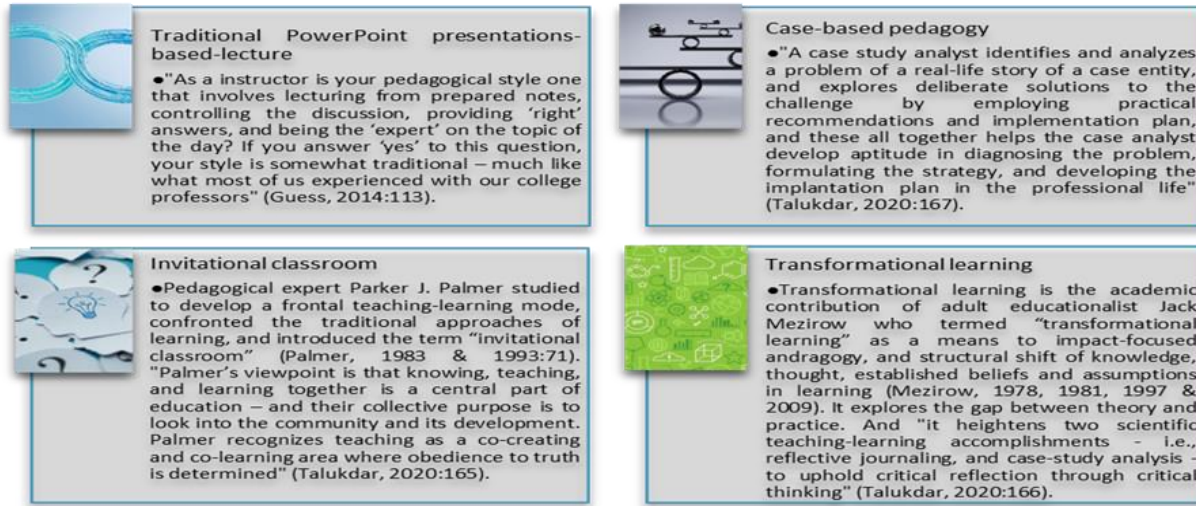
TEACHING-LEARNING MODALITY

A teaching faculty is supposed to select instructional methods, considering the age differences of students and relevant content (Tes Editorial, 2018). A 2020 study by the lead author of this paper reveals that "while both pedagogy and andragogy address educational approaches and strategies, each of them holds a distinct school of thought or unique educational philosophy" (Talukdar, 2020). It explains that "andragogy" implies self-esteem and experience-sharing, and it is a problem-solving-driven approach that is appropriate for facilitating education for adult learners. Contrarily, the "pedagogy" makes students heavily reliant on structured content, the faculty's intensive assistance, and formal assessment (Talukdar, 2020).

Talukdar (2020) points out that the old school of "pedagogy" used to focus on children's education only. Yet, the undergraduate programs of universities extensively depend on "pedagogy." The graduate programs follow a mixed method of "pedagogy" and "andragogy." To apply the andragogy or theory of adult learning, professional courses such as seminars, workshops, diplomas, training programs, continuous learning, and a non-formal education system are used. Since students learn differently at different ages, the teacher's "pedagogy" is supposed not to be a "one-size-fits-all" style. Thus, the emergence of a new school of "pedagogy" – that is to say, "developing diversified pedagogical teaching methods for different age groups" – becomes an inevitable reality.

Talukdar (2020) further opines that traditional lecture-based teaching is old-fashioned. It has become obsolete in a top-ranked university education system. Now, faculty members of a ranked university cannot exclusively depend on the PowerPoint-based lecture method of teaching. While "case-based pedagogy" appears to be a dominant teaching-learning method at ranked universities around the globe, it is not supposed to run alone. It must go with the "invitational classroom" and "transformational learning." "Case-based pedagogy" performs well when it goes with the "invitational classroom" and "transformational learning" alongside the "traditional power-point-based lecture" approach.

Even though undergraduate programs in many countries are still heavily dependent on the old-fashioned presentation-based-lecture method, following just single-book-based lectures has become unacceptable even at marginalized universities. A university faculty member's presentation must follow a wide range of reading materials, including books, scholarly articles, and cases. The pedagogical approach includes the "case-based pedagogy," the "invitational classroom," and the "traditional PowerPoint presentation-based lecture" methods of teaching and learning. The andragogy-based teaching-learning example is "transformational learning." Figure 1 briefly clarifies the four teaching-learning methods discussed above.

FIGURE 1
FOUR TEACHING-LEARNING METHODS FOR UNIVERSITIES

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Considering the analytical frame presented in Figure 1, the linking context of the four teaching-learning methods for universities with the teacher-centered and student-centered approaches to knowledge and skill transfer is built into Figure 2.

Figure 2 also shows how the linking context of teaching-learning methods and approaches is related to high-tech and low-tech techniques for learning. The techniques, however, are not explicitly exhibited in this figure. Teach.com (2021) is a website dedicated to teaching-learning issues that explicitly demonstrates high-tech and low-tech techniques for learning.

FIGURE 2
LINKING CONTEXT OF THE TEACHING-LEARNING METHODS
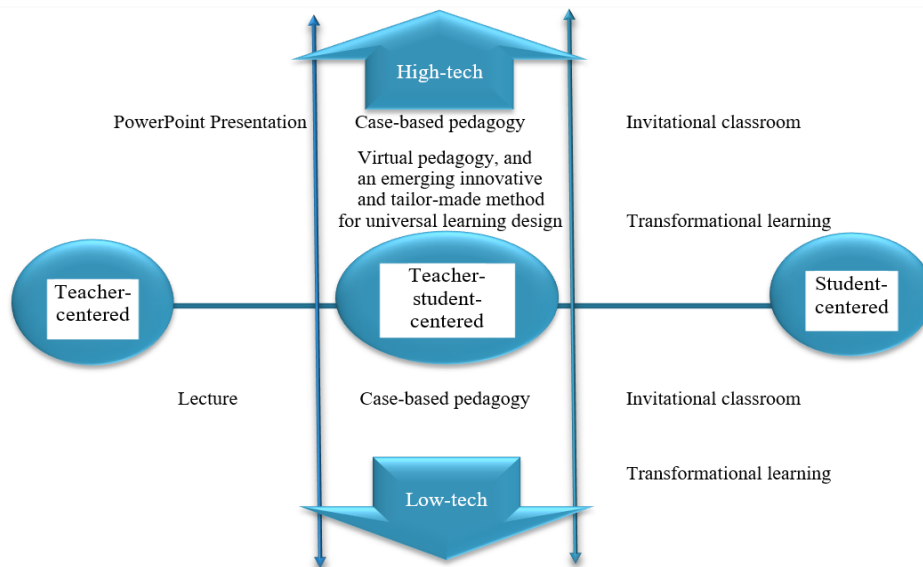
The magnitude of a combination of the four teaching-learning methods and the leverage of each, and additional applied innovation, agility, and flexibility in the facilitation of the teaching-learning process at

universities depend on the teaching-learning modality. There are four dominant teaching-learning modalities, i.e., on-campus classes, virtual classes, blended teaching-learning, and the triple system of classes.

The first one is traditional, the second one is the pandemic outcome, the third one is evolving, and the fourth one is forthcoming. The latter is the sole outcome of this study and the pure contribution of this paper. The appropriateness of a teaching-learning modality depends on external environmental change, global teaching-learning paradigm-shifting, contextual fitness and relevance, learners' needs, and the internal reality of universities. This section of the paper clearly defines the four modalities of university teaching and learning.

On-Campus Classes

The Collins English Dictionary's connotation of the term "on-campus" is "on the area of land that contains the main buildings of a university or college" (Collins, 2014). The term "on-campus" is defined as an adverb by definitions.net as "engaging in an activity by a faculty member or a student of an educational institution on the campus," whereas it is defined as an adjective by definitions.net as "campus-based facilities or activities regularly utilized by the faculty or students of an educational institution" (Definitions.net, 2021).

Therefore, on-campus classes refer to the traditional campus-based classes. Learn.org points out that campus-based teaching-learning is more of the traditional college experience, particularly at the undergraduate level. "Students may live on campus, participate in sports and extracurricular activities, attend events, and get more hands-on experience in their chosen fields" (Learn.org, 2021).

On-campus programs or courses offer classes on campus with a specific schedule that requires students and a concerned faculty member to attend a class at a specific time and a specified number of times every week. That might require changing one's regular work schedule. Some business schools, however, offer on-campus classes during the evening and weekends to help targeted students, especially professional graduate students, overcome their scheduling concerns.

Virtual Classes

Virtual classes are analogous to online classes and virtual functions in a versatile set-up of online object-oriented programming. In most cases, virtual classes operate differently, but each of them is tailored to fit with the contextual fitness and relevance, as well as context-specific students' requirements. It helps students and faculty members with the easiest way to re-schedule work around the rest of the day as it undertakes distance mode, and thus it saves time, travel, and energy.

Virtual classes could be purely online platform-based or hybrid program-based (i.e., grounded in both online and on-campus features). The latter is discussed separately under the sub-heading "Blended Teaching-Learning." Even when a program is offered fully online, there are two format options: asynchronous online learning and synchronous online learning.

Asynchronous or self-paced learning programs are tailored to make pre-recorded course materials available online for specified or distant target groups. Contrarily, synchronous or live virtual classes hold on to run real-time-based online classes remotely. Live online classrooms require students and faculty members to log in on a real-time basis to conduct teaching and learning at specific times and durations throughout the semester.

Online learning, whether taught in live sessions or in a self-paced format, offers many advantages to lifelong learners. As long as you are disciplined and refine your time management skills, you can gain a lot of great experience and knowledge that give you a competitive advantage in the workforce. Choosing the format that is best for you will help you get the most from your online courses (Joubert, 2019). At an online college, the resources you get will be slightly different than the resources that will be available to you at a traditional on-campus college. Online schools are less expensive, partly because you don't have to pay for facilities such as gyms, libraries, dining halls, and residence halls (Best Online Universities: Resources, 2021).

You do get to interact with other students at both online and offline universities. It's a common misconception that students who go to school online never talk with other students or their professors. Your social interactions with students and professors depend on your habits. If you want to have social relationships with others in your program, you'll have to reach out in the same way as you would if you had just met someone in a classroom. You'll interact with other students through VoIP, chat rooms, and email, and your professors are available to help you through the material, just as you'd find at a typical campus college (Best Online Universities: Interaction, 2021).

Blended Teaching-Learning

Blended learning is an emerging educational modality that is hybrid program feature-based, i.e., grounded in both online and on-campus features. It combines online learning tools, techniques, materials, and opportunities with traditional on-campus classroom methods and approaches. It requires the physical presence of both faculty members and students for campus-based classes and runs virtual classes in distance mode. This definition is aligned with Graham et al. (2013), who defined blended learning as a blend of online and in-person delivery of teaching. The online portion effectively shifts some of the face-to-face contact time rather than simply supplementing it.

A 2015 comprehensive review of evidence-based studies on blended learning reveals the harmonies of defining blended learning. According to this meta-synthesis, blended learning is "considered a combination of traditional face-to-face modes of instruction with online modes of learning, drawing on technology-mediated instruction, where all participants in the learning process are separated by distance some of the time" (Siemens et al., 2015, p. 62). All evidence-based studies, examined by Siemens et al. (2015), p.71, reveal that student achievement was better in blended learning experiences compared to either fully online or full-fledged face-to-face learning experiences. Blended teaching-learning is highly context-dependent (Lothridge et al., 2013). Also, the term "blended learning" is analogous to "hybrid learning," "mixed-mode instruction," "technology-mediated instruction," and "web-enhanced instruction."

The initial concepts behind blended learning were developed in the 1960s, but the formal terminology to describe it took place in the late 1990s. Still, it was vague until Bonk and Graham (2006) published the first handbook on blended learning. The handbook defines blended learning as a learning system that "combines face-to-face instruction with computer-mediated instruction" (Bonk and Graham, 2006, p.5). According to researcher Norm Friesen's 2012 report titled "Defining Blended Learning," blended learning refers to a variety of possibilities offered by combining the internet and digital media with an established classroom structure that requires the physical copresence of the teacher and students (Friesen, 2012).

While Bonk and Graham (2006) emphasized face-to-face class involvement, Friesen (2012) focused on virtual instruments, although both valued the requirements of the combined approach. In its current form, blended learning for universities emphasizes the call for a blended approach of on-campus classes and synchronous or live virtual classes, while both parts seem to be equally important. It has evolved from the pandemic experiences with virtual classes and from their practical needs and limitations, as well as given the reality of the transition to the post-pandemic period.

The Triple System of Classes

In this paper, the term "triple-system of classes" refers to running complete on-campus classes, blended teaching-learning, and full-fledged virtual classes simultaneously as well as separately under separate plans and schedules. The 2020–21 pandemic experiences of private universities in Bangladesh with virtual classes and the overwhelming challenges they face during the transition to the post-pandemic period strongly call for the blended teaching-learning approach, but the post-pandemic paradigm seemingly calls for a triple-system of classes.

CONTRIBUTION OF THE STUDY

The lead author of this paper conducted a purposively consultation-based survey on his graduate and undergraduate virtual classes on almost 320 students during the summer and fall semesters of 2021. The

result of the consultations reveals that not all students seemed enthusiastic about campus-based classes in the fall of 2021 and spring of 2022 semesters. Most of them (45%) are interested in blended teaching-learning (i.e., a blended approach of on-campus classes and virtual classes, providing equal weight to both). 35% of students are in favor of exclusively face-to-face classes, while 20% of students still prefer virtual classes from spring 2022 onwards.

The survey result reveals that now there is a call for the triple system of classes. A notable number of students appreciate the triple system of classes running from the spring 2022 semester onward. Nonetheless, a greater number of graduate students compared to undergraduate students suggests the triple system of classes to be operative, as this will allow students to choose from several options, according to their circumstances and preferences.

The Way Forward

The next day, a student who wants to enroll in an undergraduate or graduate program at a private university in Bangladesh is likely to be ready-set-go with physical, mental, and financial strength. But as the prospective learner starts to assess the offered programs at a given university, he or she probably notices that the desired program is accessible online, also offered in on-campus mode, and a mix of the two modalities. The advantage of a specific teaching–learning modality depends on the educational paradigm shift, environmental resilience, contextual fitness and relevance, and individual needs and circumstances.

The latter refers to the individual advantage of learning online or on-campus or with a blended approach that depends on one's lifestyle, where the learner lives, what the person does, and what he or she expects to gain from the program. There is no one-size-fits-all modality for all situations. Figure 3 shows a comprehensive framework of the teaching-learning modalities for private universities in Bangladesh during the pandemic, the transition to the post-pandemic, and the post-pandemic periods.

FIGURE 3
THE TEACHING-LEARNING MODALITY FOR PRIVATE UNIVERSITIES IN THE POST-PANDEMIC PARADIGM
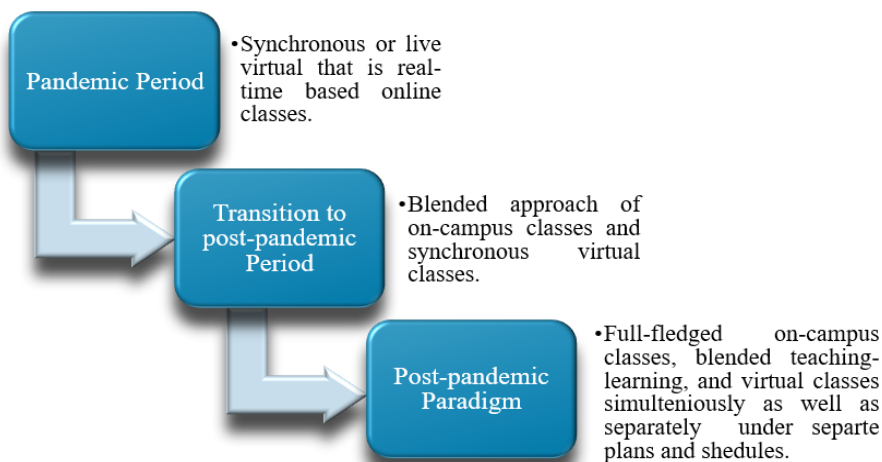
Considering the paradigm-shifting of education, pandemic reality, contextual fitness and relevance, and individual student needs, Figure 3 above determines the call for a blended teaching-learning approach for the transition to the post-pandemic period and a triple system of classes for the post-pandemic paradigm. Figure 4 below shows a focused synthesis model fitness test result for the blended teaching-learning modality for private universities in Bangladesh.

FIGURE 4
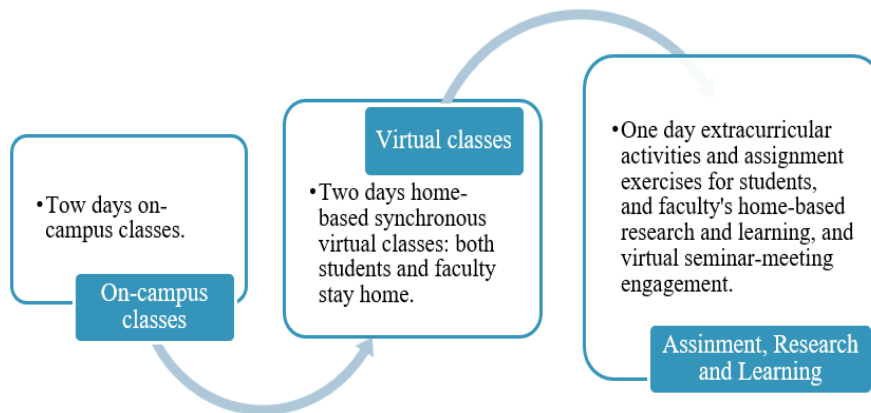**A FOCUSED SYNTHESIS MODEL FITNESS TEST RESULT FOR BLENDED TEACHING-LEARNING**

Figure 4 prescribes two days of on-campus classes, two days of home-based virtual classes, one-day extracurricular activities and assignment exercises for students, and the faculty's home-based research and learning and virtual seminar-meeting engagement in a week. Considering the pandemic experience and panorama, global paradigm-shifting of education and its trend analysis, and the University Grants Commission (UGC), Bangladesh's proposed policy on blended teaching-learning for higher education institutions (HEIs), this emergent model is developed and examined with the assessment of student perceptions by the lead author of this paper.

It is likely to help reduce COVID-19 spreading risk, travel hours a week, and campus-based physical operations and costs. It will also help students a lot in terms of a wide range of knowledge sharing, using inclusive learning platforms, and getting the benefits of comprehensive teaching-learning methods, e.g., invitational classroom, transformational learning, case-based pedagogy, traditional PowerPoint-based lectures, virtual pedagogy, and emerging innovative methods for universal learning design.

Teaching-Learning Methods in Blended Learning

At the onset of the discussion on teaching-learning modality, the paper discussed pedagogical approaches "traditional PowerPoint presentations-based-lecture," "case-based pedagogy," "invitational classroom," and andragogy-based approach "transformational learning."

While Figure 1 briefly differentiates the four established teaching-learning methods, Figure 5 shows how these methods could be approached in an organized and connected way in a blended teaching-learning modality, where case-based pedagogy is centrally positioned and connects the other three, as well as a new method titled "virtual pedagogy." The later one is an emerging, innovative, and tailor-made method for universal learning design, and this is the sole contribution of this study.

FIGURE 5
**ORGANIZED AND CONNECTED TEACHING-LEARNING METHODS IN BLENDED
TEACHING-LEARNING MODALITY**
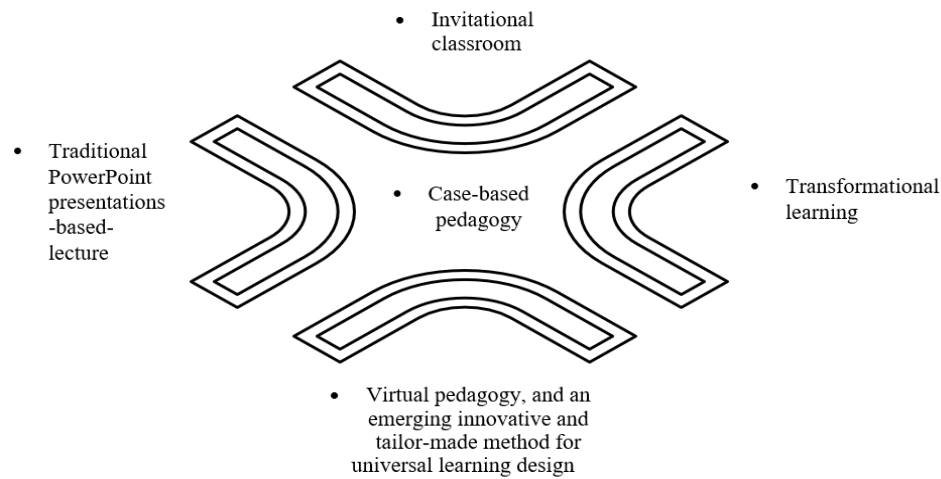
Considering the "multiple intelligence" theory, which embraces the fact that different learners are reinforced to learn most effectively in different ways, the idea of virtual pedagogy with an emerging innovative and tailor-made method for universal learning design is placed at the concerned faculty members' discretionary authority, flexibility, and agility to find innovative ways to integrate both high-tech and low-tech student-centered teaching-learning techniques.

CONCLUSION

Physically reopening universities after a prolonged period with a pandemic panorama requires taking appropriate safety measures. University buildings and facilities, as well as business modalities, may need to be structurally modified to make them fit and relevant to the contextual change. In the first place, education programs and teaching-learning modalities must be revised to make them tailor-made for the new situation. The contextual reality, structural change, and transformation of teaching-learning modalities for the HEIs are theoretically grounded in the nature of the structural contingency theory of Thompson (1967), Lawrence and Lorsch (1967), and Mintzberg (1979, 1989), and the lessons learned from Hannan and Freeman's (1977) population ecology theory.

It is noteworthy that there is no one-size-fits-all teaching-learning modality for all situations. Figure 3 shows a comprehensive framework with teaching-learning modalities for private universities in Bangladesh during the pandemic period, transition to the post-pandemic period, and post-pandemic paradigm. Figure 4 presents a nascent model for blended learning, considering the pandemic experience and panorama, global paradigm-shifting of education, as well as the UGC's proposed policy on blended teaching-learning for HEIs. Furthermore, Figure 5 has tailored an organized and interconnected skeleton with the established teaching-learning methods and offers an innovative method for the blended teaching-learning modality.

The contributions of the study – i.e., the emergent framework in Figure 3, the nascent model in Figure 4, and the tailor-made method for universal learning in Figure 5 – require a new theoretical foundation, which is beyond the scope of the study. Therefore, the next round of studies will focus on developing a new theoretical base in support of and in use of the contributions of this study. Finally, the forthcoming study will develop a versatile and state-of-the-art theory with appropriate assumptions, principles, and research questions.

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