

# Curriculum Design And Delivery In Higher Institutions In The Post-Covid-19

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## Abstract

The post-COVID-19 era offers an opportunity to reevaluate educational goals, making the curriculum relevant, appropriate, and responsive to the development of preparation in times of emergencies. The rising question is: how should curriculum be designed and delivered in post-COVID in preparation for uncertainty? Using content analysis through the lens of curriculum studies, this research tried to reimagine higher education in the post-COVID-19 period. The study argues on the premise of cognitive load theory that to improve learning efficiency, teaching and learning curricula should be created using cognitive load theory to lessen the demands placed on students' working memory. Also, the new standard curriculum must place a strong emphasis on the development of students' readiness competencies. It is concluded that instructional methods that primarily use online modalities should be taken into account in the context of many circumstances.

**Keywords:** Curriculum Design and Delivery, Cognitive load theory, Higher institutions, Post-COVID-19, Students.

## Introduction

The COVID-19 epidemic has altered higher education in a variety of ways. Web-based education was created as a result of the need to create and implement alternative instructional and evaluation systems for in-class teaching and learning. Both traditional (face-to-face) and online teaching methods have advantages and disadvantages (Adanlawo and Chaka, 2022). COVID-19 accelerated a number of improvements at academic institutions. Many academic institutions now use blended or hybrid

modes of instruction. The significance of alternative work-integrated learning (WIL) strategies has been realized as a result of the swift transition to online and distance learning models.

Even though COVID-19 presented educational institutions with unique hurdles, it had an impact on both teachers' and students' ability to provide and acquire quality teaching and learning. Hall et al. (2020) aver that COVID-19 had a substantial impact on the educational system. According to Adanlawo and Chaka (2022), the COVID-19

disruption has accelerated a number of reforms in academic institutions. Although the "new normal" in higher education setting has been presented as "online teaching and learning," Given that face-to-face instruction appears to have returned as the primary pedagogical method of operation, it is questionable whether this is a realistic situation. (Puma, 2022).

Likewise, the post-COVID-19 era offers an opportunity to reevaluate educational goals. Making the curriculum relevant, appropriate, and responsive to the development of preparation in times of emergencies is one of the goals. (Almajali et al., 2022). Curriculum as described by Tribe (2002) is a comprehensive set of educational opportunities for a degree program. Full educational prospects are, however, now compromised. Dopson and Tas (2004) underline the difficulty of currently adding practical content to curriculum planning and development. Nevertheless, despite the diverse approaches to education, there is a shared conviction that community and stakeholder engagement, evaluation, and feedback should be maintained. Adanlawo and Chaka (2022) assert that existing curriculum objectives touch on a number of readiness issues. The risen questions are, what are the opportunities presented by the pandemic? how ready are academics for post-COVID? How should curriculum be designed and delivered in post-COVID in preparedness for uncertainty?

### **Theoretical framework**

Positive change might result if COVID-19 prompts teachers to reflect on "why" they instruct the way they do. This broadens the "whole landscape of opportunity" that virtual learning offers, opening up opportunities to approach problems differently and more successfully. It gives teachers opportunity to redesign strategies that will enhance their teaching methods (Guppy et al., 2022; Nkomo and Adanlawo, 2023). It is crucial to remember that teaching courses,

whether in person, virtually, or entirely online, is not an end of itself. Any course delivery should aim to establish an effective learning system (Mackatiani et al., 2022). Only if teachers modify their teachings to take into account their students' working memory will they be able to help students assimilate and retain information. The specific relationship between what is referred to as "working memory" and "long-term memory" is examined by cognitive load theory (Sweller, 2020).

The process is broken down into three main parts: sensory memory, working memory, and long-term memory. Working memory receives information from sensory memory, which it either processes or discards. When the brain analyses information, it categorises it and stores it in "schemas" for long-term memory. According to Sepp et al. (2019), cognitive load is a measure of how much information the working memory can accommodate. Working memory has a certain amount of space, thus instructional methods should avoid filling it up with extra tasks that do not directly support learning.

In order to improve learning efficiency, training and learning materials can be created using cognitive load theory to lessen the demands placed on students' working memory (Kirschne et al., 2018). Because of this, it makes sense to modify your instruction to take into account the level of experience of the students you are teaching. The cognitive load theory states that lecturers are effective when they provide students clear instructions, followed by practice and feedback, while teaching them new skills and knowledge. This shows that in order for teaching to be effective, care must be taken to avoid overtaxing the mind's ability to comprehend information. Rather than adding unnecessary elements, it is crucial to include components that support education. For better comprehension, only the concepts that need to be learnt should be

the focus of the activities (Licorish et al., 2018). Studies have demonstrated that education utilizing static graphics and visuals, such as annotated screenshots, can be as effective as or even more successful for learning because it puts less stress on our short-term memory (Hassan, 2016; Lowe et al., 2017). The use of graphics is believed to lead to better understanding and retention. Although they are processed simultaneously, words and images use distinct areas of our working memory, which has the effect of reinforcing each other. However, words and visuals should be placed close to one another so that it is obvious that they are connected; if not, it will be harder for students to digest them simultaneously, which will put greater strain on their memory (Wang et al., 2021).

Since inquiry-based learning places a heavy cognitive burden on students' working memory and is typically unproductive for less experienced learners, teachers should steer clear of it. If a student already possesses domain-specific knowledge, they can use that information to classify the issue and the solution with accuracy. For students with experience, inquiry-based learning is preferable for this reason. Information would not enter the long-term memory banks if working memory processing were not possible. Working memory overload may make it difficult for students to comprehend information, which can impair understanding, memory, and learning (La Lopa and Hollich, 2014). The working memory load must be kept to a minimum in order for students to process information more quickly and learn more effectively. According to cognitive load theory, the working memory of students is less subjected to needless cognitive load, which is crucial for teachers.

### **Curriculum Designing and delivery**

A plan including elements might be referred to as a curriculum (Schneiderhan et al., 2019). The objective, content, approach, and evaluation are

the components of the curriculum. Drawing ideas from this viewpoint, it is necessary to consider these four components while developing a curriculum in any era or setting. In the post-COVID-19 era, rethinking education from the perspective of curriculum studies is essential. In terms of curriculum, it provides a glimpse of the opportunities and challenges that will face education in the future. By exploring the curriculum alternatives in terms of purpose, content, approach, and evaluation, educators in the field will be better informed of the major issues, choices, and solutions that must be carefully explored as we go into the new era.

The need for incorporation of readiness information into the curriculum is essential (Christensen and Knezek, 2017; Reddy and Adanlawo, 2018). Despite the limitations imposed by COVID-19, a new curriculum may nonetheless adopt content integration. With this strategy, it is possible to spend fewer hours on each subject while still meeting all of the curriculum requirements. According to Dean and Campbell (2020), this tactic will make it possible to include curriculum content requirements from diverse topics into the design of instruction. For instance, while teaching literature, science, and history, the curriculum might be incorporated by going through historical eras and emphasizing the literary and scientific contributions made throughout each one. It is also important in reducing the curriculum's content to teach "important" material and omit "non-essential" material. However, there is a significant issue with this suggestion about the definition of "important" content. Pokhrel and Chhetri (2021) recommend taking the following three factors into account while building curricula for post-COVID-19:

1. Significance. The importance criterion is used when evaluating content based on how vital it is to the subject being

studied. It is recommended to include the information in a curriculum when it is thought to be significant and beneficial to the subject.

2. **Relevance.** This criterion is based on the idea that content should be connected to the values, aspirations, norms, and issues that the society faces in order to assist students become productive citizens.
3. **Utilities.** The current and future applications of the content should be taken into account by curriculum designers. students must understand certain material that they can use right away, while they also need to understand other material that will help them deal with challenges in the future.

For material that is significant, pertinent, and helpful, the post-COVID-19 era can be a teaching opportunity. It is critical that the delivery and revision of the curriculum put the needs of the students first. To create a basic curricular model, the need for the use of fundamental components, including objectives, knowledge, learning experiences, and evaluation. Xie, Gulinna. and Rice (2021) avers that the conventional schools of thought in curriculum planning are the content approach, the process approach, or a combination of both. According to Faturoti (2022), the content approach, like the process approach, is a teacher-led curriculum that is centered on the needs of the learner and fully involves them in the learning process. The curriculum ought to emphasize the function of language (critical aspects of language) and its tangible consequences on teaching and learning (Liasidou, 2022),

More importantly, it is crucial that instructors are aware of the importance of online learning. Digital accessibility is a crucial issue when creating inclusive learning environments because of the rise in the number of students with disabilities enrolled in higher education and the

possibility that some of these students prefer online learning due to its temporal and spatial flexibility (Xie et al., 2021). Because students with disabilities should be able to participate in online courses with similar learning opportunities, accessible course materials are required. For teachers to indulge in online teaching effectively, Dean and Campbell (2020) claim that a teacher's philosophy affects how they "perceive and deal with preferred teaching approaches, including how (or whether) we pick and use e-learning technology." Rotar (2022) and Zondi, Nkomo, and Adanlawo (2023) advise paying more attention to the key aspects of online teaching and learning. Additionally, it is suggested to look beyond the pedagogical and technological aspects of online learning.

Nordmann et al. (2021) advocates for development of more effective and "inclusive" online educational designs to achieve an effective online teaching. Fatokun, Salman and Adanlawo (2022) describe how online peer assistance and mentorship can be facilitated through virtual learning settings that encourage communication and interaction. Rotar (2022) avers that a compassionate and sympathetic online learning communities where all students' "voices," experiences, and concerns are taken into consideration and appreciated equally is a first step in promoting students' "online inclusion. These factors can have a big impact on accessibility in online learning environments. In order to promote the development of more diverse online communities of practice, the latter should serve as critical places for challenging and destabilizing hierarchical social connections and prevailing norms (Lackovic, 2020).

According to Adanlawo and Chaka (2022), to activate the emancipatory potential of pedagogy to trigger socially fair change, the teaching process must be rigorous, lively, and rooted in a sincere love for the act of teaching. Teachers'

enthusiasm includes enthusiasm for the discipline or subject, which is distinct from but inextricably linked to enthusiasm for teaching itself. As enthusiasm can either be personally experienced by teachers or demonstrated in their instruction, it has both affective and behavioral components. Students who are favorably encouraged to participate actively and meaningfully in the learning process and who subsequently share their own excitement for this process are those who are most likely to transmit the latter component (Dewaele and Li, 2021). In order to ease students' anxieties and build relationships with them, it is critical that online instructors are passionate, motivating, reassuring, and ready to tackle challenges and make the most of opportunities that arise.

### **Challenges and opportunities created by COVID-19**

In order to rethink and reorganize higher education in terms of curriculum design and delivery, it is necessary to take into account the new educational opportunities and problems that the COVID-19 pandemic has brought about (Maatuk et al., 2022). The "new normal" in higher education must be simultaneously envisioned the importance of online teaching approaches in building the "new normal" in the post-Covid-19 age has been recently underlined by research, raising questions about the role of higher education in fostering more inclusive e-learning settings. The issues are caused by digital inequities that are inextricably related to other types of social inequality and power imbalances that have gotten worse as a result of the pandemic, as well as by universities' incapacity to develop successful virtual learning communities.

Chaka and Adanlawo (2022) assert that despite its apparent ability to enhance teaching and learning, digitization may result in new forms of inequality and exclusion that would further harm vulnerable groups of students. Some groups of

students in higher education were unable to access digitally mediated knowledge, resources, and support, posing a significant barrier to integrating online pedagogies. This is particularly true for students from historically underrepresented groups who are more likely to face digital unfairness and to be socially and digitally excluded, such as students with disabilities, poor socioeconomic status, members of racial or ethnic minorities, and migrants (Faturoti, 2022). It is concerning that these students are less prone to participate in and adapt to online learning options. According to Nordmann et al. (2021), online instruction is the "new normal for higher education" and will likely have an impact on curriculum development and the path that education is taking in the post-COVID-19 age.

### **Implications of COVID-19 on curriculum design and delivery**

The COVID-19 outbreak has had a severe impact on educational systems all around the world. Studies point to a number of deficiencies, including the inability of academic staff to use online platforms (Ouma, 2021; Adanlawo and Chaka, 2022), the incapacity of online platforms to carry out specific academic functions (Ali, 2020), inequality in students' levels of information intake (Osman, 2020), and the unfavorable learning environment that some students experience at home (Pokhrel and Chhetri, 2021). Because they are unable to relate to their peers, students socialise less online. Students who cannot study independently have a difficult time adjusting (Rashid and Yadav, 2020). Students' levels of academic performance declined as a result of a reduction in the number of hours they spent learning because they spent fewer hours learning as a result of the COVID-19 pandemic's restrictions on online learning and instruction. Additionally, students' inability to consult with their teachers when they encountered difficulties in their learning had an

impact on their performance (Dahmash, 2020). The requirement to develop a curriculum in terms of purpose, content, strategy, and evaluation is necessary to ensure a smooth transition to the post-COVID future. By doing this, the field instructors will be more knowledgeable of the important issues, choices, and solutions that need to be carefully taken into account throughout the post-COVID period.

### Conclusion

The domain of instructional design for cognitively complex or technically demanding information is where cognitive load theory is most effectively utilised. The theory has significant implications for how curriculum should be created, which must keep learners' cognitive loads low throughout the learning process in order to be effective. Through the lens of curriculum studies, this research tried to reimagine higher education in the post-COVID-19 period. The new standard curriculum must place a strong emphasis on the development of students' readiness competencies. It can be difficult to decide whether to incorporate or remove curriculum content. On the other hand, instructional methods that primarily use online modalities should be taken into account in the context of many circumstances. Regarding instructional evaluation, a few issues with learning assessment serve as important reminders for educators. From this vantage point, more creative and engaging "online learning" techniques can assist to strengthen educational systems and better prepare them for any future crises and uncertainties (Toquero, 2020).

COVID-19 crisis has brought a shift in academic institution. The pandemic also gave the unprepared and hasty users of online education and learning systems a lot of chances. It has strengthened the bond between educators and students. This pedagogical shift is described as an experiment by Siow et al. (2021), and even in cases where it has been implemented

unsuccessfully, there are still opportunities and lessons to be learned in order to foster more achievements (Naik et al., 2021). It takes "professional creativity" (Adanlawo and Rugbeer, 2021) and "technical savviness" to utilise technology's potential to develop inclusive and equitable virtual learning spaces for all students in higher education.

Despite the difficulties, it can be said that online teaching and learning are now an alternative available to both lecturers and students. To keep the education system moving, both lecturers and students must adjust to the numerous internet platforms that are available. Though it is difficult to create an acceptable system that will meet educational needs and be practical for all students and academic staff. The adoption of computerized technologies for teaching and learning has accelerated more, thanks to COVID-19. It encouraged instructors and students to have cutting-edge knowledge about using online platforms. The epidemic has highlighted the shortcomings of higher education's institutional framework and the need for academic personnel to participate in digital technology training in order to adapt to the rapidly changing global educational environment (Ali, 2020). In conclusion, COVID-19 has caused a sudden shift in higher education institutions from lecturing in classrooms to online learning. While the swing was considered a possible solution to the crisis in advanced education during the COVID-19 era, this research shows that it also brought with it a number of challenges for students and academics. Despite the difficulties, this research shows that COVID-19 has opened opportunities for student assessment, teaching, and learning.

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