# Effective Migration to Virtual Learning - A Sustainable Instructional Strategy for the Post COVID-19 Era: Challenges and way forward

by

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## Abstract

Even before the COVID-19 pandemic, the educational system, the world over, had desperately yearned for an effective migration from the analog (face-to-face) style of instructional delivery to digital (blended, virtual, online, or distance) style, due to the fact that most challenges associated with traditional teaching/learning style can best be effectively handled by the digital style. While most developed countries had successfully migrated to virtual/blended learning, developing countries (like Nigeria) have been stuck with the analog style till the pandemic which has made it mandatory for the educational system to survive digitally or perish. In the face of this reality, there is a need for a guide that ensures an effective migration. Therefore, this paper seeks to prescribe effective procedures for embracing virtual learning by providing an overview, rationale, challenges, and mitigation measures in the form of recommendations for migrating from the face-to-face mode to the virtual learning mode of education.

**Keywords:** Effective Migration, Virtual Learning, Sustainable, Instructional Strategy, COVID-19 Era

## Introduction:

The rise and ravaging effect of Corona Virus Disease – 2019 (also known as COVID-19), has left a devastating impact on every sector of human endeavor, the world over. According to Magnus (2020), the pandemic is an infectious disease caused by the newly discovered Corona Virus. He adds that the virus is mainly transmitted through droplets generated when an infected

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person coughs, sneezes, or exhales and that the droplets are too heavy to hang in the air, which makes for a quick fall on the floor or surfaces. Abel (2020) points out the symptoms of COVID-19 to include fever, dry cough, tiredness, aches and pains, sore throat, diarrhea, conjunctivitis, headache, loss of taste or smell, a rash, and discoloration of fingers or toes.

Tandan (2020) submits that one can get infected by breathing in the virus if found in close proximity with a COVID-19 carrier. According to him, touching the eyes, nose, or mouth after touching a contaminated surface can also result in contracting the virus. Medical practitioners lament that there is yet no known definite cure for COVID-19, and while most infected persons will develop mild to moderate illness and recover without hospitalization, some have lost their lives even after being hospitalized. According to European Centre for Disease Prevention and Control (2020), since 31st December 2019 and as of 2nd September 2020; 25,776,601 cases of COVID-19 (in accordance with the applied case definition and testing strategies in affected countries) have been reported, including 857,448 deaths.

As a way of fighting the spread of the virus, Magnus (2020) points out that governments across the globe emphasize that citizens should stay at home, keep a safe distance, wash their hands as often as possible, cover the mouth while coughing, use a face mask, avoid touching the eyes, mouth, and nose, and call the emergency lines whenever symptoms are observed. These mitigation measures have placed a serious embargo on the physical gathering of people for religious, business, social and academic purposes. Even though the seriousness of the embargo keeps depreciating across the nations of the globe, technological avenues have been embraced as an effective alternative to face-to-face meetings.

In the field of education, before the emergence of COVID-19, there has been a considerable degree of migration from face-to-face to blended and outright virtual education. Considerable scholarly debates favour the effectiveness of virtual learning as an alternative to the face-to-face mode of instructional delivery, despite the associated challenges; especially, against the backdrop of the usually overpopulated classrooms in Nigerian tertiary institutions. In the face of the prevailing realities posed by the COVID-19 pandemic, necessity demands that, for education to be sustained, virtual learning must be embraced. Nevertheless, Johnson, et al (2021) cautioned that such migration must never be done haphazardly but, follow due process which educational ICTs for educational purposes must go by. This paper, therefore, presents an overview of virtual learning, the rationale and effective procedures for embracing it; as well as associated challenges and mitigation measures for adopting it as an instructional strategy.

**Overview of Virtual Learning:**

With the advent of the Internet and computer, as well as the peripheral hardware devices, software, under ware and mobile devices, delivery of instructional content began to gradually migrate from face-to-face to blended/virtual mode which seeks to communicate instructions via possible platforms and devices. Rachera (2017) sees virtual learning as a learning experience that is enhanced through utilizing computers and/or the Internet both outside and inside the facilities of the educational organization. Agreeably, Caleb (2018) puts it that virtual learning is an instructional exercise that makes use of computers and the Internet to deliver instructions to learners without physical contact with them in terms of time and place.

Interchangeably used with web-based learning, e-learning, online learning, and distance learning; virtual learning makes use of Internet-enabled mobile gadgets to provide instructions to learners at their own pace. It makes use of live broadcast and recorded uploads to avail learners of

instructional content at their own time and place. It can effectively and functionally occur in the absence of traditional classroom environments. Here, social presence, cognitive presence, and teaching presence replace physical presence. Gully (2014) posits that effective virtual learning must ensure access to motivation, online socialization, information exchange, knowledge construction, and development. Accordingly, the teacher acts as a facilitator to ensure that instructional objectives are maximally achieved.

Outstandingly, the basic features of virtual learning, according to Rachera (2017) and Caleb (2018) include:

i. remote access to an unlimited array of educational services (topics and tutors) offered worldwide;
ii. the individualized learning process that takes into cognizance the personal level of competence, individual needs, and personal learning styles;
iii. total dependence on the computer, Internet, and mobile gadgets to communicate instructional contents to learners at their own pace, without any physical contact;
iv. safe and secure learning environment;
v. flexible learning in terms of time, location, and pace; and
vi. dynamic communication channels that foster effective communication between teachers and learners, as well as learners and their peers.

Being theoretically supported by behaviorism, cognitivism and social constructivism; virtual learning, when properly adopted and implemented using digital technologies, can maximally achieve the following benefits as outlined in Mangal and Mangal (2012), Singh (2008) and Peter (2019):

i. *New and improved technical abilities:* Regular engagement with digital learning material and group tasks makes the learner get familiar with new tools and software as well as digital problem-solving skills. These skills, beyond the duration of the program, can help the learner to function effectively in a world that is regulated by technical competence.
ii. *Enhanced critical-thinking skills:* Being a self-paced and self-motivated learning style, the learner is exposed to thinking critically about the tasks in class and out of class. Both at individual and group levels, learners think critically to effectively carry out academic tasks and this lives with the learners during and after the program.
iii. *Improved online communication, collaboration, and networking:* It provides students with endless opportunities to collaborate and network with peers in the execution of a given project. Sharing of specialized knowledge, information, and solution to problems are enhanced via virtual learning platforms.
iv. *Improved flexibility and solo-paced learning:* Since students are not tied down to a fixed learning schedule, they have the power to attend to instructional activities at their own pace, while also having time for work and family. The flexibility provided by virtual learning allows for effective time management for individuals who wish to learn while still working and growing in their chosen profession.
v. *Improved documentation:* All information in the form of live discussions, documents, e-mails, training materials, collaborative discussions with peers, and

shared project findings are safely saved in an online database, thereby making it possible for easy access when the need arises.

vi. *Diversified mode of delivery:* Since virtual learning makes use of mediums like texts, graphics, animation, audio, and video to communicate instructional content across different platforms, the teacher is at liberty to effectively select the medium and platform that best conveys the intended course content and achieves laid down objectives.

vii. *A broader global perspective:* Due to the fact that virtual learning is accessible from any location across the globe, class discussions and project execution explore a wide range of cross-cultural perspectives. Students also get exposed to a wide range of instructors who provide wider global perspectives of finding solutions to problems.

viii. *Cost-effectiveness:* The cost of acquiring information and the overall certification is relatively cheaper than having to go through local institutions of learning. Outstandingly, the cost and risk of traveling from time to time are ruled out as learners can access learning content from any location. Also, since most materials are online, they can be downloaded once and shared amongst learners, thereby avoiding the cost of buying hard copies as is the case with traditional local institutions.

ix. *Access to a wide variety of courses and expertise:* Being online, learners can access a wide range of courses that may not be accessible within their local institutions. Also, having to be taught by experienced experts across the globe is an advantage that virtual learners enjoy which further broadens their spectrum about a given phenomenon.

Not outstanding the benefits of virtual learning outlined above, there are constraining factors that, if not properly managed, could militate against the effectiveness and efficiency of such instructional ventures.

**Challenges of Virtual Learning:**

The overall ability of virtual learning mode of instructional delivery to achieve the laid down goals and objectives would depend on the extent to which the militating factors are contained, which includes the following as pointed out in Peter (2019) and Johnson, and Udo, (2020):

i. *Boredom with studying materials:* Outstandingly, people who engage in virtual learning complain of the boring nature of study materials. The high rate of using texts to prepare reading materials to communicate with instructors and peers as well as monitoring and evaluation make the learner very bored.

ii. *High cost of Internet data:* The cost of acquiring daily, weekly, monthly, or quarterly subscriptions is very high and unaffordable to some learners. This becomes a problem, especially, because every instructional activity requires Internet access, and a leaner who cannot afford Internet data subscription misses out. This can further create a gap in the instructional outcomes between learners who can afford data subscriptions and those who cannot.

iii. *Poor Internet coverage:* Epileptic Internet describes the quality of the Internet that is used by most people, especially in rural areas. Since downloading study materials, collaborating on assignments and projects, communicating with instructors as well as submission of assignments require stable Internet access, having epileptic Internet coverage can be very frustrating.

iv. *Inadequate infrastructural and technological preparation:* Most study centers lack the infrastructure and basic Information and Communication Technology (ICT) tools that make for effective instructional preparation, presentation, and follow-up. Where infrastructures like good office space, good audio/audiovisual studio, basic communication gadgets, appropriate software, and source of electricity are not in place, the teacher becomes handicapped.

v. *Poor technical competence:* Some of the facilitators of virtual learning programs lack the digital literacy to effectively design, prepare, present, evaluate, and follow-up instructional exercises that follow the virtual mode of delivery. Some learners also lack the prerequisite digital literacy to maximally benefit from virtual learning.

vi. *Insufficient readiness of stakeholders:* In some cases, the overall outcome of virtual learning suffers a setback due to the fact that the facilitators and learners are not mentally and otherwise ready to effectively play their roles on the virtual stage for the maximum achievement of laid down instructional goals and objectives. The minutest level of un-seriousness or unprofessionalism on the part of the instructor could spell doom for the program.

vii. *Internet hacking and insecurity:* The rampant hacking of organizational databases by Internet crackers creates an air of insecurity because documented data are not safe. Such hacking can cause loss of very vital data which may not be recoverable.

viii. *Political insincerity:* Most government policies on education are only beautiful on paper but lack the sincerity of implementation. Where some money even gets committed to funding education, however insufficient; corruption, embezzlement, and misappropriation divert the funds and cripple the efforts. This makes it impossible to effectively execute virtual learning.

ix. *Lack of specialized manpower:* The effective running of virtual learning would necessarily require the services of instructional content designers, graphic designers, curriculum experts, scriptwriters, computer software specialists, audio and audio-visual producers, technicians, and other relevant manpower required in multimedia design, preparation, presentation, and evaluation. Sadly, since these professionals are not readily engaged, teachers take the easy way out and this is disadvantageous.

x. *Inappropriate evaluation strategies:* The means of measuring the extent of success or otherwise of any instructional exercise is evaluation. In virtual learning, instructional content is designed, prepared, and presented to students. Utilizing inappropriate procedures for evaluation tends to yield results that can neither be reliable nor generalized.

Overlooking such accompanying challenges would culminate in the entire exercise amounting to an adventure in futility. Therefore, necessity demands that a well-thought-out the replicable procedure to efficiently handle the associated challenges and make virtual learning hyper-effective and result-oriented be followed.

**Recommendations:**

Migrating from traditional to the virtual mode of instructional delivery must not be done haphazardly if, the goals and objectives must be achieved in a sustainable and replicable way. Hence, the following are recommended to guide the concerned educational authorities:

i. *Needs assessment:* Educational experts who specialize in mobile learning must be invited and saddled with the responsibility of clearly establishing the discrepancy between what is obtainable at the moment and what is ideally needed for the vision at hand. They should ensure that they provide a realistic roadmap that shows the intended destination and how to reach there, pointing out the needed human and non-human resources, as well as where and how to get such.

ii. *Formulation of goals and objectives:* Based on the outcomes of the need assessment exercise, the goals of virtual learning should be clearly spelled out and broken down into achievable objectives. This would guide the curriculum planners and instructors in their activities and serve as terms of reference to all stakeholders and, especially, the content providers.

iii. *Making a realistic budget and funding plan:* A financial consideration for putting in place the desired infrastructure, acquiring ICT resources as well as manpower necessary for a smooth take-off and sustainable running of the program must be spelled out. Beyond the budget, a well-thought-out realistic funding plan must be in place. This should spell out the possible sources of funds, the start-off budget, as well as the figures that are likely to come from each source, and a plan on generating maintenance costs.

iv. *Building a suitable infrastructure:* Whether in the case of using an existing structure or building a new one, an architectural design for such a project should take into consideration the different units that function collectively for effective virtual learning and provide for all of them. Offices, design unit, production unit, live presentation unit, security unit, power or electrical unit, as well as every necessary peripheral unit(s), must be provided for.

v. *Employing, training, and re-training of manpower:* While working on the infrastructural structure, the necessary manpower, ranging from instructional designers to scriptwriters, technicians, computer specialists, Internet experts, animation creators, audio/audio-visual producers, and every needful manpower must be employed and exposed to training for efficiency in carrying out specialized assignments for the effective operation of virtual learning.

vi. *Acquiring, installing, and maintaining necessary equipment:* For the smooth running of virtual learning, necessary tools for the design, production, and presentation of instructional contents must be acquired, installed and modalities for effective maintenance ensured. Such equipment should include; computers, internet routers, cameras, audio and vision mixers, peripheral devices, and alternative sources of power supply to cover up where there is an epithetic power supply. Internet service providers must also be carefully selected on the basis of providing strong and affordable Internet services. This will make for ease of preparation, presentation, evaluation, and follow-up of virtual learning programs.

vii. *Equipping the instructors with necessary skills:* The instructors are the major actors that facilitate the virtual learning process. The unprofessionalism of an instructor

can both, directly and indirectly, affect the extent to which learners benefit from virtual learning programs. Thus, instructors must be trained and retrained in the skills of course organization, design, production, presentation, evaluation and follow-up, online communication, collaboration and networking, time management as well as every needful skill that could enhance efficiency. They must also be equipped with Internet-enabled mobile gadgets with steady internet access, to keep them afloat in communicating with learners.

viii. *Providing beginners' orientation and support for learners:* Since virtual learning requires a considerable level of computer literacy, it would therefore be dishonest to assume that all learners possess it. A beginner's orientation in the form of seminars, workshops, or practical handbooks will better prepare the learners and put them all on a leveled ground for a smooth start off. Due to the high rate of poverty, concerned authorities should provide mobile gadgets at a subsidized rate to learners and provision should be made for an open internet where learners can utilize them to download learning materials, network with peers, and communicate with instructors.

ix. *Provision of security measures for safekeeping data:* While ensuring that data is available and accessible to learners, effective data management should be ensured via data life cycle management and information life circle management in the clouds. This will safely store up data against corruption as well as provide links on every subject matter. Screening measures for visitors should be enabled as well as faster data recovery and restoration of lost data.

x. *Adopting appropriate means of evaluation:* Evaluating instructional content delivered via virtual learning platforms must focus on testing learning outcomes. Instructors and facilitators must set activities that effectively show the level of knowledge attainment. Formative evaluation is encouraged to ensure mastery of instructional content and learning tasks.

xi. *Constant program review using the Substitution, Argumentation, Modification, and Redefinition (SAMR) Model:* A periodic systematic review must be carried out on the program using the SAMR model which advocates substitution, argumentation, modification, and redefinition. Such reviews can identify inherent issues associated with running the program and proffer practical and replicable solutions for sustainability.

## Conclusion:

The survival of the educational sector in the face of the COVID-19 realities depends on the extent to which virtual learning is effectively embraced as a departure from face-to-face mode. Notwithstanding the dynamic potentials of virtual learning, its overall success or otherwise would depend on the extent to which it is effectively implemented. Where the above recommendations are adhered to, not only will a successful migration be ensured, but the outlined goals and objectives of such mode of instructional delivery will be maximally achieved.

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