QUALITY FRAMEWORK FOR ONLINE TEACHING AND LEARNING

Part 1 - Online Education

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Content

Online teaching and learning

Introduction

Online learning is education that takes place over the Internet. It is often referred to as "eLearning", among other terms. However, online learning is just one type of "distance learning" - the umbrella term for any learning that takes place across distance and not in a traditional classroom. Distance learning has a long history, and there are several types available today, including:

a) Correspondence Courses: conducted through regular mail with little interaction.

b) Telecourses: where content is delivered via radio or television broadcast.

c) CD-ROM Courses: where the student interacts with static computer content.

d) Online Learning: Internet-based courses offered synchronously and/or asynchronously.

e) Mobile Learning: using devices such as cellular phones, PDAs and digital audio players (iPods, MP3 players).

The emergence of Online learning and teaching in 21 century

Information technology (IT) today is a broad concept that, in simple terms, provides an open and flexible learning environment in a more general way than traditional classroom teaching. Using IT can create forums for collaboration despite the physical distance; simultaneously, it makes it easy for students to access and explore information at their preferred pace. The use of technology in teaching should not be an end in itself. It concerns using the technology in situations where it provides added value. Online learning can be broadly defined as using the Internet to enhance the interaction between teacher and student. Online delivery covers asynchronous forms of interaction such as assessment tools and the provision of web-based course materials and synchronous interaction through email, newsgroups and conferencing tools, such as chat groups. It includes both classroom-based instruction and as well as distance education modes. Other terms synonymous with online learning are 'web-based education' and 'online learning. Though there are numerous examples of using machines and tools in education throughout history, online L/T is a relatively new concept in the modern sense of the term. Slide projectors and television-based classes have been in use since the 1950s.

However, one of the first instances of online learning in the world can be traced back to 1960, at the University of Illinois, USA. Though the Internet was not invented, students began learning from interlinked computer terminals to form a network. The first-ever completely online course was

offered in 1984 by the University of Toronto. In 1986, the Electronic University Network was established for being used in DOS and Commodore 64 computers. Three years later, the University of Phoenix became the first educational institution to launch a wholly online collegiate institution, offering both bachelor's and master's degrees. This was the beginning of a revolution whose potential was largely unknown to the public back then, but one that would make learning extensively accessible and within reach of what people could ever have imagined. Online learning is booming in current times. Aided by the widespread availability of high-speed Internet, using new technologies such as 4G and the soon-to-be-released 5G, online learning is expected to grow by leaps and bounds in the foreseeable future. The worldwide market size of online education was approximately $187.87 billion in 2019, a 400% increase over what it was just six years ago. This phenomenal growth has been made possible not just by the rapidly evolving scenario in the world of technology but also by the spread of education in the developing world. Experts predict that the next wave of online education will occur not in North America and Europe but in newly emerging markets like Africa, India, and China. Online learning is no longer just limited to colleges and universities. Since primary school, online learning is gradually being incorporated into the curriculum. The recent COVID-19 pandemic further illustrates the importance of online education in today's school system. It has proven to be a boon to both students and teachers alike who cannot attend school due to the risk of disease spreading. Beyond high school, online learning is steadily increasing its market share at the pre-university level. Furthermore, online L/Tis also expands in presence beyond the traditional fields.
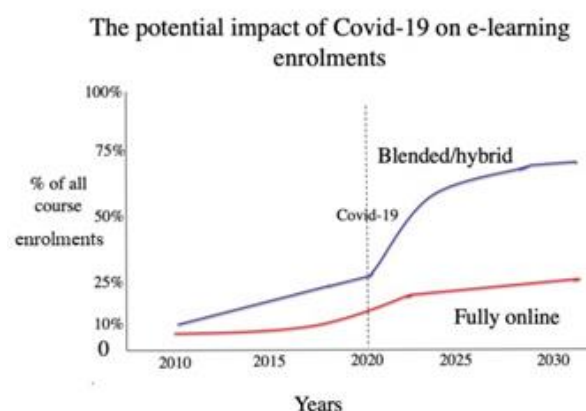
The 21st century has brought about a massive change in the world of education. Gone are those days when teaching was limited only to the confines of a classroom. The Internet has brought about a paradigm shift in the fundamental way learning is done. It has taken education beyond the hallowed walls of the universities and into the palms of everyone.

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and online learning. Online learning is no longer just limited to colleges and universities. Since primary school, online learning is gradually being incorporated into the curriculum. The recent COVID-19 pandemic further illustrates the importance of online education in today's school system, as it has proven to be a boon to students and teachers alike who cannot attend school due to the risk of spreading disease. Beyond high school, online learning is steadily increasing its market share at the pre-university level—furthermore, online L/Tis also expands beyond the traditional fields.

The potential impact of Covid-19 on e-learning enrolments

(chart: % of all course enrolments vs Years 2010–2030, showing Blended/hybrid and Fully online lines, with Covid-19 marker at 2020)

Recent Developments in Online Learning

Online learning has evolved far beyond its original capabilities. It is no longer limited to a didactic method, which had a one-way monologue from the teacher to the student. Current advances in online learning enable the student to play an active role in the learning process with regular feedback and assessments. This has dramatically improved the effectiveness of the teaching system, bringing it on par with classroom-based learning. Some of the features that give an edge to online education are:

a) **Less expensive than traditional teaching methods**: As the cost of teaching is low, the expenses borne by the students inevitably come down. This makes education far more widespread and economical.

b) **The wide variety of available courses**: These days, online courses on everything are available at the touch of a button – from religion to commerce, philosophy to fashion designing, programming to painting, photography to yoga – there is hardly any field that hasn't been touched by online learning.

c) **Study groups**: There is a scope for engaging with like-minded students worldwide and sharing information and ideas.

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d) **Flexibility**: This can be in terms of time, money, and location. Online learning enables the student and the teacher to be present at opposite ends of the world, in different time zones, yet have the knowledge imparted effectively.

e) **Much less infrastructure required**: This is a huge incentive to the education providers, as the additional costs are minimised mainly.

f) **Standardized quality**: Since the online content can be evaluated and revised at any point, it helps maintain a reasonable quality standard.

Smartphones have played a crucial role in making online learning viable. It is rapidly gaining ground even in rural areas, making high-quality education available to the masses at par with the best in the world. Massive open online courses (MOOCs) are promising new fields. The total number of students enrolled in MOOCs has risen to about 100 million. Thus, the recent developments in online learning can be broadly attributed to the following factors: (Source: New York Times)

a) Innovation in smartphone technology

b) High-speed data access

c) Interactive learning models

d) Rising number of start-ups in the online L/T field.

The Future of Online Learning

The following factors will play a central role in this rapidly ongoing transformation:

The rise of A.I. (Artificial Intelligence) - With the rise of Artificial Intelligence in education, many different ways are used to help students learn. Here are a few technologies with A.I. that are already affecting and will affect education in every way (Chatbots, Virtual Reality, Learning Management System, Robotics)

Cloud-based solutions and Cloud computing empower the education industry. Cost reduction is a top

benefit of cloud education software. Real-time collaboration is an essential aspect of cloud computing education, and a cloud-based education platform also improves physical and digital access to resources.

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The Internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

To summarise, online learning is one of the most life-changing innovations of the present century. Education is perhaps the biggest asset of the modern era, and online learning has provided a medium to disseminate it among the entire population. This development presents a situation full of potential, which, if properly harnessed, can catapult the world into a new path of growth and prosperity.

Face-to-Face vs Online Learning

Online teaching and learning also shifted education toward a student-centred approach in which students "co-create" their learning experience. This approach empowers students as active learners instead of passive recipients absorbing information and reproducing it for standardised tests. This pedagogical shift in approach emphasises:

a) The Lerner is a unique individual.
b) The relevance of the learner's background and culture
c) Increased responsibility for learning belongs to the student
d) Motivation for learning comes from the successful completion of challenging tasks
e) Instructors as facilitators help learners develop their understanding of content
f) Learning is an active, social process
g) The dynamic interaction between task, instructor, and learner. Synergy!

A few differences exist between the typical face-to-face classroom and an online course. Some of these differences are more obvious than others. The course schedule is the most apparent difference. The ordinary face-to-face course is synchronous; both teacher and learner must be at the same time and in the same place (or at least the same Zoom session). One of the reasons online courses have grown in popularity is that these courses are asynchronous. Students can enrol in a class without committing to a specific time of day each week, leaving them free to complete coursework on a schedule that works for them. The synchronous/asynchronous dichotomy is a helpful way to think about many of the other differences, and these are explained in the table below:

When teaching a F2F course, the teacher:	When teaching online, the teacher:	What are teacher experiences?
Get non-verbal feedback from students during the class. I am usually able to see when students are confused or lost.	We need to write clear and detailed instructions and encourage the students to ask questions when they are uncertain about course material or about what they are supposed to accomplish.	
Teachers can see who is taking the exams, so the teachers know they are not cheating.	Assess student understanding, including written assignments, discussions, essays, and projects, and should utilise various tasks. If the teachers need to give an exam, teachers have options for minimising the threat of academic dishonesty if they need them.	
I have been teaching this course for so long these teachers do not have to plan anything. They check where I left off during the last class period and move on.	We must have all instruction and activities planned and available to the students. Updating or making it up as I go will create confusion for students and headaches for me.	
Have office hours where teachers wait in their office for students to come to talk about the course.	Teachers can still have office hours, but they hold them online so students who have questions can "come to talk to teachers" in Zoom, Collaborate, or another communication tool.	
Please get to know students well by	I am pleased to know my students well because we use a lot of written	

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interacting with them in class.	communication, and they share details with me that they would probably never bring up in class.	

See the following video clips:

https://www.teachertube.com/watch?v=rrrpK_ZjV1Q

https://www.teachertube.com/watch?v=Awf2rmBXpZQ

Educators' Role in Online learning/teaching

Although only the perspective of time will allow us to assess the full impact of the Covid-19 pandemics on our society in general and education in particular, it seems that the challenges posed by Covid-19-related lockdowns are accelerating many developments which have been underway for decades. The technology enabling remote teaching and supervision has been in place for many years, and its use has been growing. In addition, there is a growing number of apps offering their users the opportunity to learn new subjects without the involvement of a teacher. Accordingly, the shift caused by the Covid-19 pandemic and the subsequent lockdown consisted not so much in introducing entirely new technologies but in increased use and further refinement of already existing ones, as well as in a profound change of the "default settings" of teaching. Until the Covid-19-related lockdown in early 2020, face-to-face classroom teaching was generally perceived as the "normal", "default" case for learning.

While the abrupt change from traditional face-to-face classroom teaching to online delivery posed a significant challenge for teachers and learners alike, it also stimulated new research comparing the opportunities and limitations of different forms of education. The most important aspects regarding teachers' role in online teaching/learning compared to f2f are:

a) Online teaching and learning require a student-centred approach which is more likely a teaching methodology and instructional activities involving students in doing things and thinking about what they are doing. The learner-centred instruction attempts to engage students in activities that support knowledge constructions through media use but are not designed to control learning. In this model, learners use media to investigate and think. This learning activity can lead to it being described as active learning. Some of the strategies promoting active learning in the classroom are as follows:

b) Students are involved in more than listening.

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c) Less emphasis is placed on transmitting information and more on developing Students' skills.

d) Students are engaged in activities (e.g., reading, discussing, and writing).

e) Greater emphasis is placed on students exploring their attitudes and values.

In addition to school-based and out-of-school factors, students' online learning has additional factors, which can be categorised under the student-related, instructor-related, content-related and online interaction-related factors. These factors may appear as issues for those teachers and students who do not possess the skills of creating or working in a flexible, collaborative and learner-centred online environment or are non-tech savvy and financially unstable to afford the expenses of online learning. Yet another factor which can be associated with online learning is the teachers/instructor's attitude toward online learning. Notably, teachers' positive attitude toward online teaching encourages them to adopt the online modality skilfully while teaching.

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Quality in online teaching and learning

As online education methods grow and diversify, the need to ensure that these new forms of delivery support rather than reduce the value, quality and validity of higher education qualifications is essential. Additionally, as the use of online technologies becomes more integrated into traditional teaching and learning, the need to recognise the outcomes of higher education regardless of delivery mode has become a priority. In many E.U. member states, agencies are developing online education quality assurance approaches. For some member states, online education remains on the margin of systems that account for the quality of education. Other methods consider online and blended learning within already established quality assurance systems.

Quality attention areas

What is quality in online learning? Existing quality assurance frameworks, guidelines, and benchmarks show that quality in online learning has many dimensions. However, here we focus on these several common issues practitioners and students should attend to, namely attention areas.

The Quality attention areas represent areas of institutional practice that quality assurance practitioners can assess about online and blended education delivery. They represent distinct operational but interconnected facets of education practice that can be evaluated and integrated into internal institutional systems. The Quality attention areas are consistent with findings from quality models that showed most frameworks relate to three areas' six dimensions. As the domains are generated from institutional practice areas with no hierarchical ranking, the Quality attention areas should not be organised in hierarchical order. That means the areas are all equally important, and the numbering in this framework is for ease of reference rather than an implied order or hierarchy.

Performance Indicators (P.I.) for Quality Assurance

Most national quality assurance systems involve external monitoring and emphasise accountability rather than continuous improvement. Using the P.I.s requires institutions to engage in critical self-assessment that promotes the development of a reflective culture of quality, which is particularly important within new and emerging online systems. Performance Indicators are tools to evaluate performance trends in the institution/programme/course and to initiate continuous improvement. In developing the P.I.s, the institutions have to ensure that they would:

   a) provide comprehensive coverage of the most relevant domains of quality in online education of the institutions

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b) capture essential aspects of performance

c) impact on overall institutional/programme quality improvement

d) focus on the effects of institutional processes on learners

e) make sense logically and in practice

f) be realistic and implementable

Several benchmarks or quality areas have been defined and tested worldwide. The most common areas provided in this quality framework, Quick Scan and guides for improvement are common aspects of a quality experience in the online learning environment that can be identified. These are:

a) Course development

b) Course structure

c) Teaching and learning (instruction)

d) Student support and engagement

e) Student assessment Examination

f) Technology

g) Evaluation

Online Learning and Teaching Terminology

Asynchronous learning	A delivery modality for online courses in which work and participation requirements may take place at different times. Asynchronous courses can be time-constrained (i.e. over a semester, term, quarter, or so on), but elements of the coursework and learning materials would be available with a degree of flexibility rather than only offered at a specific time.
Applied Learning or Practice-Based Learning can	It is defined as experiential, hands-on, active learning that integrates academic and rigorous technical content in problems and projects that connect school to life and work education based on one's reflections on one's actions. Applied Learning may be complemented by Theory-Based Learning.
App	It is short for "application," which is the same as a software program (not to be confused with an application for entry to a school).
Asynchronous learning	It is a general term used to describe forms of education, instruction, and learning that do not occur in the same place or at the same time. This means one is doing the work when it is convenient. Most online courses are asynchronous, though instructors may include synchronous components,

	such as weekly meetings, and require attendance or participation. See also: Synchronous.
Blended learning	Blended learning environments include face-to-face and computer-mediated learning activities (Graham, 2006; Porter et al., 2014). While some education researchers and practitioners use the terms "hybrid" and "blended" interchangeably, the distinction we are making is that while hybrid courses always involve a reduction in face-to-face time – that is, they replace some of the face-to-face time with web-based learning activities – blended courses do not necessarily involve a reduction in face-to-face time (for instance, they may have students engage in some online activities while physically present during face-to-face class meetings, or may have students engage in web-based learning as part of their out-of-class homework).
Blog	An online journal (blog is short for weblog) may be available to the general public or entirely private, open to select friends and family. You can usually adjust your blog settings to restrict visitors from commenting on your blog entries.
Cache	On a computer, the cache stores recently used information so that it can be quickly accessed at a later time. Computers incorporate several types of caching to run more efficiently, thereby improving performance. Shared caches include browser cache, disk cache, memory cache, and processor cache.
Cookies	Cookies are tiny files that a site uses to track your online activity and recognise you when you return to the source site. Trusted sites are sites that you allow to download cookies to your computer even though the privacy setting you've made might not let any other sites do so
ePortfolio	Electronic collections of artefacts typically showcase the interests, goals, and achievements of individuals and/or groups. Using an ePortfolio to share work is associated with positive gains, but not nearly as many as when paired with reflective work and implemented as a High Impact Practice (HIP).
Fully online	Entirely online means just you and the screen-you complete all the work online. You could, for instance, enrol in a course at a school that is physically located far from you.

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Instant Messaging	Instant Messaging (often called just IMing) used to be referred to as real-time e-mail. IM is ideal for quick, little messages for touching base and saying hi or getting an answer without a formal e-mail.
Instructor	An Instructor, or Lecturer, usually focuses on teaching rather than research, although, unlike an adjunct, may serve on academic committees. These positions are typically non-tenure track.
Learning Management System (LMS)	A Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting and delivery of online learning education courses or training programs.8 The technology platform through which students access online courses, an LMS, generally includes software for creating and editing course content, communication tools, assessment tools, and other system management features.
Learner-centred	Learner-centred teaching is a balance between students who are empowered to control their learning and faculty who employ the best teaching strategies (Weimer, 2013). Implementing a learner-centred approach in online or face-to-face courses requires the consideration of both rigour and flexibility.
Learning modalities	Learning styles and learning modalities are often spoken of interchangeably. We commonly consider four modalities: visual (seeing), auditory (hearing), kinaesthetic (moving), and tactile (touching). The educational environment must consider whether the student learns best through hearing, seeing, moving, and touching.
Netiquette	Netiquette is a set of rules or standards people follow to keep the online environment pleasant and safe. Netiquette is all about communicating respectfully and politely and avoiding stereotyping. Setting those ground rules early can prevent misunderstandings.
Online assessment	The iterative and systematic process of collecting and analysing deliverables from students to reflect upon how faculty are teaching and how students are learning in online environments. In addition to exploring student performance, online assessments consider many dimensions, such as attitudes toward online learning platforms and technologies (access to sufficient settings and materials for teaching and learning and supportive living environments that create sustained emotional, cognitive, physical, and

	financial stability. Online assessment helps faculty pivot and adapt their online pedagogies to facilitate robust student learning and engagement.
Online pedagogy	The practice, theory, and assessment of online teaching and learning. There are four dimensions of online pedagogy. First, creating activities, artefacts, curricula, and other nontechnical elements of the online learning environment; second, developing theories that explain aspects of online teaching and learning; third, producing and using technology; and fourth, assessing the online environment to improve opportunities for teaching and learning continually.
Operating system (OS)	An operating system (OS) is the software that allows you to start and shut down your computer and work with all the other software programs, manage files, and connect to the Internet. Windows, Apple's Mac OS X, and Linux are common computer operating systems.
RSS Feeds	Technically, RSS stands for "RDF Site Summary," but it is commonly referred to as "Really Simple Syndication." An RSS feed will alert you when a site you are interested in adds new content. It is a convenient way to stay updated on news or opinions from various sources.
Synchronous	In Synchronous learning, the learning experience takes place in real-time, although not always in the same place (as by Skype or webinar, for instance). Even in asynchronous courses, instructors may include synchronous components, such as weekly meetings.