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Online Assessment and Evaluation

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Abstract:
On 25th March 2020, the government imposed a nationwide lockdown in India due to COVID-19 which led to the unspecified closure of all academic institutions. This situation affected around 99% of students in developing countries according to a survey of the United Nations. Under these circumstances, academic institutions switched to virtual platforms from physical platforms. Learning is imperfect without assessment. The collection of assessment data poses a challenge. To avoid these hurdles, teachers used various technologies to assess the students' i.e. online quizzes, polls, Google form, etc. The online assessment provides computer-rich, comprehensive, formative feedback that can scaffold the learning process and helps the learner to self-evaluate and enhance their learning outcome while preparing for summative assessment. It is ecological, reduces the administrative burden, receives instantaneous feedback, and ameliorates the supremacy of feedback. This is a general observation that the online assessment is suitable for online learning and provides rich feedback. This paper will focus on different techniques of online assessment. It further throws light on the advantages and challenges faced in online assessment. It also provides recommendations regarding the challenges of the online assessment.

Keywords: Online assessment, COVID-19, Feedback, Techniques of online assessment

INTRODUCTION

The Indian government's decision of imposing a total lockdown in the country to restrain the spread of the infectious virus, COVID -19 adversely impacted all sectors of the economy (Joshi et al., 2020b; Gupta et al., 20). This shocking news impacted the education sector. All schools and colleges change their mode of study they switch to virtual platforms from physical platforms. According to the report by UNESCO, over 1.5 billion students in 195 countries were affected due to COVID-19 closure. (UNESCO, 2020b). To restrain, the pernicious influence on education, the Ministry of Human Resource Development promoted online education through various platforms. Online learning is a type of education which provides via the Internet using digital apparatuses like tablets, Macs, Smartphones, etc. Online education provides flexibility to students. Those who are unable to engage through offline mode in classrooms can also approach in their comfort zone. There are no boundaries to online classes for learning students.

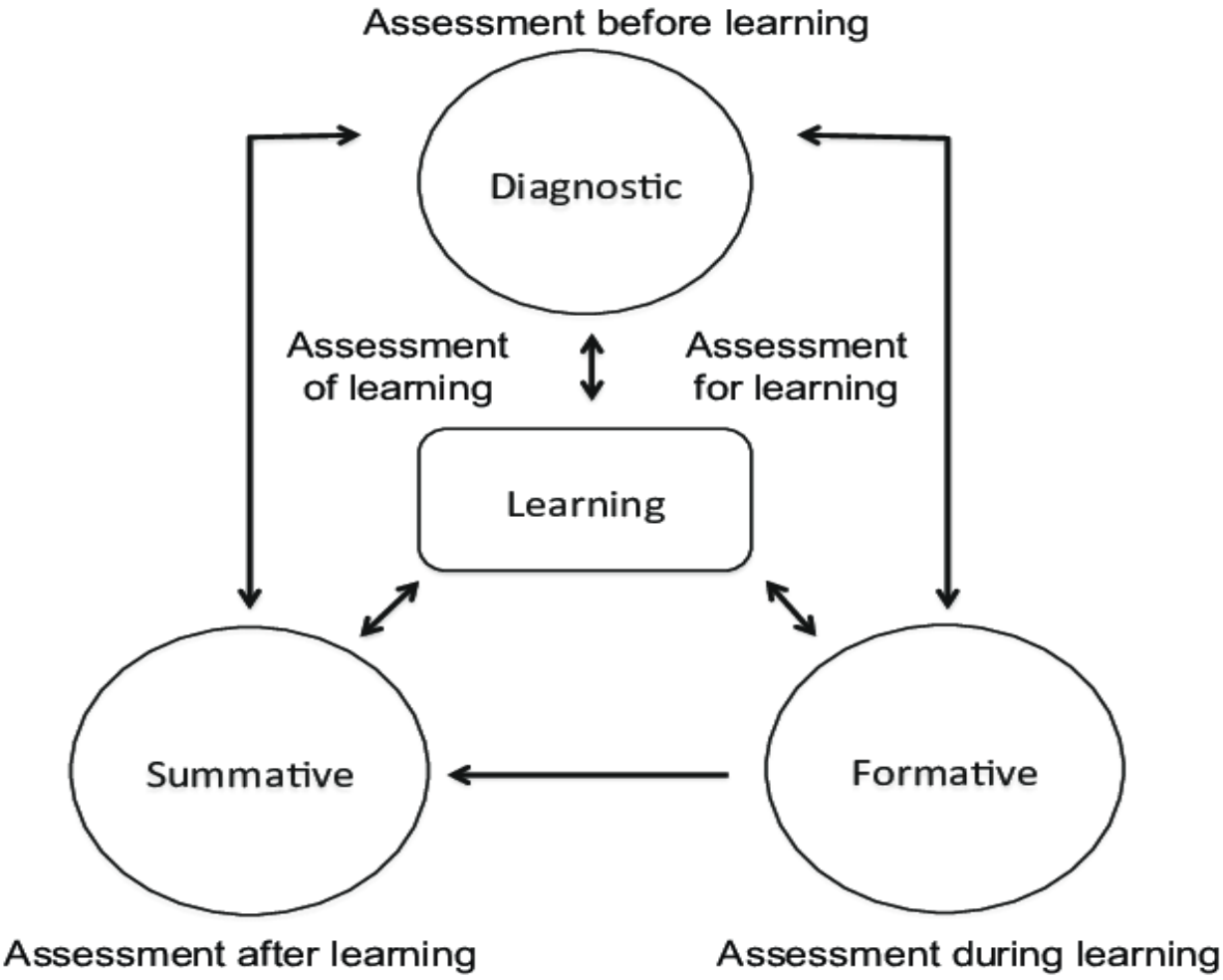
India has been successful in adopting online learning in the West region which allows students and teachers to learn and accommodate the target of making education accessible in the whole country. India is set to transform the education system into a digital empowerment knowledge society, and in this direction, a handful of initiatives have been taken to integrate ICT (Information and Communication Technology) from the school curriculum into the higher education curriculum (Kundu,2018b). Currently, even with higher educational institutions constantly striving to develop, the number of

students enrolling in universities is 37.4 million with a GER of 26.3(Nanda,2019). GER in higher education in the US is the highest at 88.2%, Germany (70.3%), France (65.5%), UK (60.6%), Brazil (51.3%), China (49.1%), Indonesia (36.4%) and India (25.8% in 2017-18) and the country aims to raise it to 50% by 2035 through the national education policy 2020(Sharma,2020,15th June). The curriculum of National Education Policy 2020 has included competencies like problem-solving, critical thinking, creativity, and communication as well as subject knowledge and skills (Kundu et al.,2020). Online education that has been getting traction across the country mandatorily will follow online assessment. COVID-19 had brought online education and assessment to vast popularity. At that time, most of the schools, colleges, and other educational institutes are touch with students through virtual modes like WhatsApp or email and conducted classes through Google Meet, Zoom, etc., and plan to take exams through online mode. Several studies assessed the student's opinions about online assessment. According to Donovan et al. (2007), 88.4% of students prefer online assessment as a motivational technique. 92% of students approved that online assessment enhances learning (Gilbert et al.2011).

Learning without assessment is scrappy. Assessment is an integral part of learning. It is the most essential and strong component of an educational experience, as it provides observable evidence of learning, determines student progress, and reveals an understanding of the educational programs. Assessment in the student-centered paradigm is used to diagnose learning problems and promote further learning, in addition to evaluating learning outcomes. In changing world of education, online learning assesses in digitalized manner. Online assessment customized the students' learning and evaluates their performance via Google form, online quizzes, polls, etc. The words similar to online assessment are e-assessment, digital assessment, electronic assessment, and computer-based assessment. Online assessment can assist as a potential catalyst to translate conventional assessment practices in response to emerging assessment challenges such as distance learning, high student-faculty ratio, and objective and high-quality feedback. Online assessment is considered a distinctive mode of recording students' responses and proving feedback. Feedback can perform several functions depending on the purpose of the assessment.

According to Drummond, (2003); Mason, (1998); Sun, (2002), online assessment and measurement is timely and important in terms of discussing continuous improvement in quality of learning, as various institutions grapple with how best to implement the assessment processes for online learning. Furthermore, the central point of multifarious research of assessment has been on felicitousness, efficacy, and adequacy of a program instead of assessing the learner's knowledge. Reeves (2000) defines online assessment as an "alternative assessment which is done in e-format. He proffered three approaches: 1) cognitive assessment 2) performance assessment 3) portfolio assessment. Cognitive assessment enhances the adroitness of expository knowledge and the more highly ordered processing of information. Performance assessment is the "measure of learning in the ontogeny domain". The third approach is portfolio assessment. A portfolio is a snippet of work that grows over time with innovative products and learning activities being added as the learner more proficient at the increasingly more difficult electronic task.

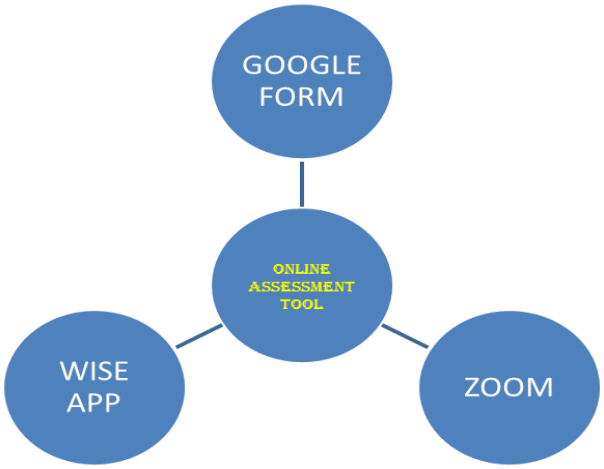
In the views of O'Reilly& Morgan (1999), Online assessment can be classified as withal summative (assessment of learning for grading purposes) or formative (assessment for learning to give rich feedback to aid the learning process). Diagnostic assessment is an assessment used by an instructor to judge the prior knowledge and self-assessment is where learner reflects on their understanding.



(Figure.1: Types of assessment)

ONLINE ASSESSMENT TOOLS

With a wide range of availability of ICT(Information and Communication Technology) tools and pervading information, there exists an immense capacity that fruitfully utilizes a wide range of assessment approaches that promote and evaluate student learning in higher education. Considering the crucial role, that online assessment plays in COVID-19 situations the following tools are efficiently utilized for e-assessment in India:



GOOGLE FORM

In October 2014, Google launched an add-on for Google Forms that enables third-party developers to add new features to surveys, while in July 2017, Google updated forms to add several new features. Google Forms is an internet-based app operated to create forms for the collection of data. Instructors and learners can use it to make surveys, quizzes, or event registration sheets. Google Forms is constructed with abundant options like short answers, paragraph answers, MCQS, checkboxes, etc. Google Form access on 171,895 websites by Google Form customers.

ZOOM

ZOOM was established in 2011 by Eric Yuan, and its headquarter is in San Jose, California. It is a cloud-based video conferencing tool that equips instructors and students with a way to meet online via a personal PC/laptop or Smartphone with or without using videos. Instructors can set up Zoom meetings to conduct online classes and record them for later access by students and use a breakout room for group activities. Zoom is an unpaid platform of online learning where 100 participants can join the meeting at a time with a limit of 40 minutes. Students also actively participate in classroom discussions or give proper feedback. During COVID-19, exam invigilation was done through Zoom. Zoom had more than 300 million participants during the pandemic.

WISE APP

The Wise app is an educational app. It is designed to work even on basic and low-configuration smartphones and slow internet bandwidth. The wise app was developed in 2020 during a pandemic by two friends IIT-Bombay, Mubeen Masudi from Kashmir and Bilal Abidi from Lucknow. It is a network-friendly mobile app used via a 2G network that allows students and teachers to cut through problems of scheduling, makes teaching and assessments over the Internet easier, and makes the experience as close to a real classroom as possible. An interactive live session with automatic attendance, collection of fees, and MCQ test with quick evaluation are the features of this application.

Further, some additional assessment tools assess the students through online mode as follows:

FILL IN THE GAP (CLOZE) AND TEXT/NUMBER ENTRY

The word "cloze" is derived from the closure prescribed in Gestalt Theory. Cloze tests require the potential to recognize the context and vocabulary to find out the correct language or part of speech that belongs in the deleted passages. This exercise is commonly administered for the assessment of native and second language learning and instruction. According to Jonz (1990), the Cloze test is the practice of measuring language proficiency or language comprehension by requiring examinees to restore words that have been removed from otherwise normal text. Furthermore, Richards, Platt, and Weber State in the Longman Dictionary of Applied Linguistics (1985) cloze test is a technique for measuring reading comprehension.

IMAGE HOTSPOTS

Image hotspots are ethical for evaluating visual knowledge that would be difficult to achieve through an MCQ or other textual question type. These questions gathered feedback on images. The benefit is that there are no visual cues from where students judge the correct answer and no discrete distracters to choose from, each pixel is a potentially correct or incorrect answer.

SIMULATIONS

Simulation tests allow for evaluating students' problem-solving skills in real-life structures. It is held in a virtual environment, where students get risk-free stress. The instructor evaluates the student's skill by creating a situation. It assists to evaluate learners' capability by applying various theories i.e case studies etc

BRANCHING SCENARIOS

Branching scenarios is a connected learning approach that focuses on content and evaluates the understanding power of learners by engaging in the situation and observing their reactions. It gives means to assess students' decision-making. Branching scenarios suggest solving a challenge with several points where a learner has to make decisions. Each option leads to a certain consequence and gives a student immediate feedback. This method is particularly effective in soft skill assessment.

SOCRATIVE

Socrative is one of the top-rated formative assessment tools to evaluate the learning of students by providing fun and effective tools to compute student knowledge in actual time. It is a cloud-based student feedback system developed in 2010 by Boston-based graduate school students. It enables an instructor to construct quizzes in the form of MCQs, true /false, graded short answers, etc. Recently, Socrative has 3 million users and it is available in 14 languages.

MENTIMETER

In 2012, Mentimeter was founded by Johnny Warstrom, Niklas Ingvar, Henrik Frasen And Kristoffer Renholm. Mentimeter is an assessment tool for online education. It comes pre-filled with education templates for the classroom like listening skill assessments, icebreakers, formative assessments, post-lecture surveys, and polls. Through this application, a teacher can conduct teacher training workshops, create quizzes and tests, etc.

POLL EVERYWHERE

In April 2007, Poll Everywhere was founded by Jeff Vyduna, San Francisco, USA. Poll Everywhere allows the instructor to put questions to their students. It integrates with Google apps like Google Slides or MS PowerPoint. Teachers can get original feedback in their questions slides without making a call to the individual student to roll out assessments as an integrated part of larger lectures. This is a resourceful way to deliver a voice lecture during the live session. This application is used by 75% of all Fortune 500 companies and by more than 300,000 educators around the world.

KAHOOT – GAME-BASED ASSESSMENT TOOL

Kahoot was launched in March 2013 by Kahoot. it is a game-based learning platform, used by educational institutions in schools and other educational institutes. The learner can play the assessment games by themselves and the instructor can add optional questions in it. In-game time and score, bases are set by the instructor. The learning encouragement is enhanced through Kahoot! Around 50 million monthly active users and more than 1 billion cumulative players used Kahoot.

PROS OF ONLINE ASSESSMENT

Online assessment is mandatory for the reason that learning without assessment is not viable. As compared to the conventional method of assessment, online assessment techniques are more unerring and faster methods to evaluate the student's knowledge. Following the study of Glamorgan University and Leeds Metropolitan University, 88.4% of students are in favor of online assessment. Furthermore, research from Jorden University (JU) and Zayed University (ZU) conclude that 59% of JU and 50% of ZU liked the virtual method, while 21% from JU and 43% of ZU liked the conventional method. This section presents the pros of the online method in different estates: Instructors, Learners, and educational institutions.

Learner's	➢ Instantaneous judgment ➢ Improves learning skills ➢ Brisk and easy to operate ➢ Provides more control and friendly interference Inspire students to enhance their performance
Instructor	➢ Saves time ➢ Flexible to use and access ➢ Improves the standard of responses ➢ Reduce the amount of work ➢ Easy to evaluate ➢ More flexible and imaginative assessments are possible, with greater relevance for students, for example; by using simulations, audio and video clips ➢ Make valuable learning ➢ Automatic evaluation ➢ Provide immediate feedback
Educational Institution	➢ Reduction in installation cost ➢ Accurate and fast result

CHALLENGES AND RECOMMENDATIONS

Howbeit, even with advantages there are diverse challenges faced during the implementation of an online assessment. Recommendations help in resolving issues. Different studies have investigated these challenges and suggested some recommendations:

- Online assessment depends upon ICT technology. However, most of the learners, as well as instructors, are not amicable with technology. Proper training should provide to them through well-trained staff.

- The deficiency of computer potency causes a lack of credence among learners and instructors. As a solution to this problem, educational institutes should provide well-trained staff and proper computer labs for them.
- However, Online assessment is done through ICT technology. The demand for servers, software licenses, number of PCs causes a high cost of the assessment. It is debatable whether using high-end online assessment strategies is cost-effective or not.
- The risk of hackers and viruses is involved in the ICT world. This risk is overcome by investing in good licensed anti-viral software and an anti-hacking system. A firewall (either hardware or software) is a system that controls requests and protocols accepted and transmitted by a server. Most assessment systems will require HTTP or ideally HTTPS (encrypted) protocols so a firewall can be used to deny access to other protocols such as FTP and e-mail.
- Stealing copyrighted content, videos, images, journal, sculptures, databases, etc is also a challenge faced by an authoritative person. Copyright holders routinely invoke legal and technological measures to prevent and penalize copyright infringement.
- Online cheating and plagiarism is the biggest challenge faced by the instructor, especially in the case of summative assessment. In the case of online assessment, there is no face-to-face interaction between students with teachers that's why the chances of fraud are more. Necessary steps can be taken through computer software to ensure the identity of students like creating an authentic login id with face and eye recognition or proctoring through videos etc. In the case of special students, another idea can be generated.
- In assessing the group work teachers have to be familiar with some difficulties. It is difficult to evaluate the group work or assess each member of the whole group with the computer. To evaluate the group work SPARK(Self Peer Assessment Resource Kit) an academic open-source project is designed.

CONCLUSION

COVID-19 plays an important role in attracting students and teachers to online assessment. During the pandemic situation, online learning becomes a primary instruction method. It also impacts the education system. It is merely difficult for students as well as teachers to opt for this change but through training, all of them cope with this module. Online assessment tools generate engaging tasks for online evaluation. Different techniques of online assessment lend a helping hand to evaluation in different situations. According to studies by different researchers, Google Forms is mostly used in India as an assessment tool. Feedback recreates an important role in motivating the students for learning.

The advantages of online assessment are that it creates confidence among learner, instructor, and institution like easy to operate saves time, provide immediate feedback which is necessary for the enhancement of student learning, and provide accurate and fast result. Although, online assessment creates a problem for untrained learners and instructor and also involve the threat of cheating and plagiarism according to recommendation problems can be resolved. Hence, this paper proves that online assessment is a better option than the conventional method in some cases. every learner can opt for this according to their comfort zone.

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