

# Assessment In Online Education: Strategies And Challenges

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## ABSTRACT

The present research paper intends to focus attention on the issue of Assessment in online education. It envisages to systematically presenting the challenges of online assessment based on the data which was collected by way of conducting semi-structured interviews with pre-determined prompts. The sample included 56 students and 21 teachers in higher education in the northern part of India during the COVID-19 pandemic. They were involved in online teaching-learning and assessment including remotely proctored examination. An overwhelming majority preferred face-to-face or alternate mode of assessment due to problems faced in online formative and summative assessment such as Internet speed and connectivity issues, device and digital space issues, technical glitches and disturbance during exam due to calls, messages, notifications, delayed response of helpline team during remote-proctored exam, some students scoring unexpectedly high due to cheating and the Multiple Choice Question (MCQ) format. Suggested remedies by the participants of this study included formulating application-based question papers, setting different question papers for every student, open-book unproctored examination with conceptual questions, seeking professional presentations on innovative topics and project work. The paper concludes that these strategies can be implemented to mitigate the identified problems, as the online mode have a long way to go even post-pandemic.

**Keywords:** Online Assessment, Online Exams, Challenges in online assessment, Strategies for online assessment.

## 1.1 INTRODUCTION

The global lockdown due to the COVID-19 pandemic posed an unprecedented challenge for the education systems all over the world to stay functional in these testing times. The entire education system was forced to shift to the online mode for all its activities including the processes of teaching-learning and assessment of learning. No wonder, numerous challenges

were faced owing to the lack of preparation on the part of administrators, teachers and everyone involved along with the non-availability of timely information about the duration of the lockdown. “Lack of availability of the suitable infrastructure, teachers’ and students’ inexperience in online teaching-learning, the change in working hours and the inconvenience of working at home are additional challenges of remote teaching” (Zhang et al., 2020). Teachers were supposed to use technology for teaching, befriending modern gadgets for designing and conducting teaching and assessment in the online mode.

Fair assessment was a big challenge, though, with the need to ensure that plagiarism and cheating were not indulged in by students and academic integrity was maintained. As a part of the system of assessment, teachers were supposed to create innovative assignments and question papers for which direct answers would not be available. These challenges still persist as online and blended modes of education have made deep inroads into the education system, most probably for all times to come.

In spite of all the difficulties, assessment could not, however, be avoided as it serves three major purposes; viz. diagnosing learning difficulties and supporting learning, providing relevant feedback and providing certification for progression, graduation, and employability. “Formative and summative assessments are conducted along with appropriate feedback systems to support learning in higher education. This means employing assessment data in a diagnostic approach to determine competence, gaps, and progress so learners may adapt their learning strategies and teachers their teaching strategies. Assessment for accountability is a function of responsibility. This is mainly achieved through providing evidence that learning is being promoted. As a means of accountability, international and national comparative and benchmark would also be established to get credibility. Assessment can also serve the purpose of offering certificate for learning of the intended outcomes, guaranteeing progress and transfer” (Archer, 2017).

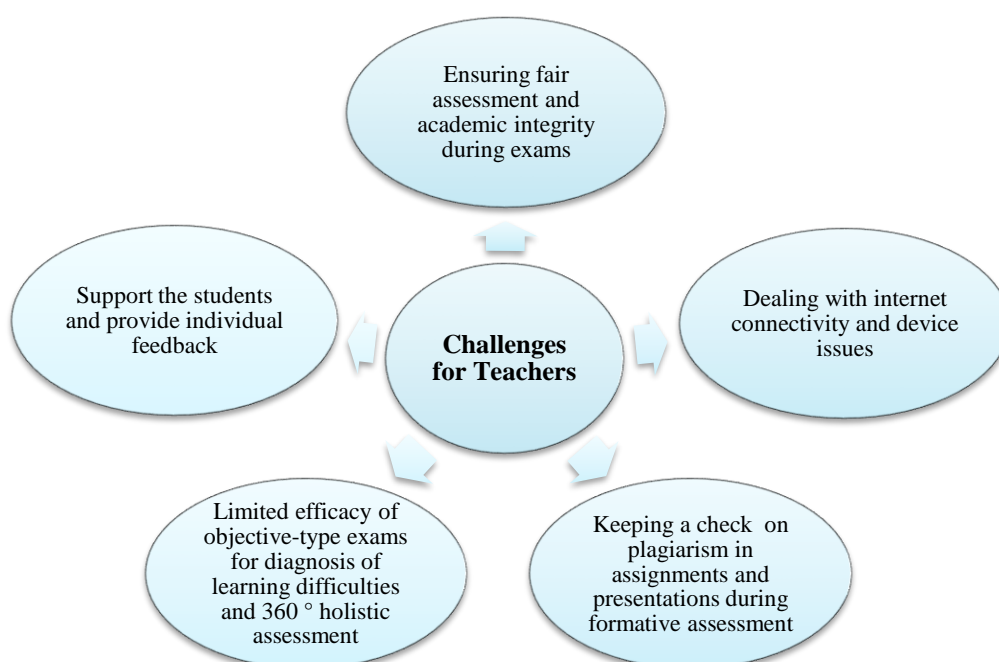


Fig. 1 Challenges of Online Assessment for Teachers

Assessment being a continuous process, it serves as a lighthouse to the teacher to determine the efficacy of the teaching methods being employed by him/her. Generally, formative and summative assessment feed into each other for the teacher to plan and conduct teaching-learning and assessment. During the transition to online mode, difficulties were observed by the teachers and the students both during formative as well as summative assessment.

## 1.2 PARTICIPANTS AND METHOD

In this research, a sequential mixed methods approach (qualitative first) has been used, complementing the use of qualitative methods with quantitative information collection and analysis techniques (Goetz & LeCompte, 1988). At the analytical level, an interpretative view is assumed, because it emphasizes the concern for the local and for the generation of a knowledge that is relevant and that emerges within these environments. This has also allowed us to observe how the students from an online university interact with educational transformations, and what realities and subjects they recognize (Anderson & Rivera-Vargas, 2020). Thus, considering the sensitivity of the issue at hand, semi-structured interviews were conducted with more than 80 students. Data of 56 students was considered and it had information about all the relevant points. All the participants were pursuing Post Graduate degree programmes. Some pre-decided prompts which were the phrases on which participants were encouraged to talk. They were given to ensure that responses with regard to all the relevant areas are received. The prompts for the students included

- i. Internet speed and connectivity issues.
- ii. Non-availability of laptop/computer or device and digital space issues
- iii. Technical glitches during exam
- iv. Disturbance during exam due to calls, messages, notifications
- v. Response of helpline team during remote-proctored exam
- vi. Use of more than one device
- vii. Use of books/notes etc
- viii. Google search of answers, use of apps
- ix. Downloaded power-point presentation/assignment
- x. Taking help of family, friends and seniors
- xi. Deliberately switching the camera off during remotely proctored exam
- xii. Some students scoring unexpectedly high due to cheating and the Multiple Choice Question (MCQ) format
- xiii. Excuse of network error for late submission.
- xiv. Alternatives to the present assessment system

To understand the challenges faced by the teachers, 25 teachers were also interviewed from various universities of North India, of which the data of 21 teachers was considered for analysis which had information about all the relevant areas. Prompts for teachers included

- i. Internet speed and connectivity issues.
- ii. Device and digital space issues.
- iii. Preventing academic dishonesty by the students as the biggest challenge
- iv. Difficulties in remote proctoring.
- v. Difficulties in online practical exams.
- vi. Shift to Multiple Choice Question (MCQ) papers.
- vii. Efficacy of MCQs in 360° holistic assessment.
- viii. Question-paper setting in MCQ format.
- ix. Diagnosis of learning difficulties and feedback through MCQ papers.
- x. Alternatives to the present assessment system.

The qualitative responses were analysed to understand the broad pattern of the challenges of online assessment from the perspective of both students and teachers. Before getting into the challenges, it will be pertinent to understand the formats of assessment that were in operation before this sudden shift to the online mode and what is being followed at present.

### 1.3 FORMATIVE AND SUMMATIVE ASSESSMENT IN ONLINE AND OFFLINE MODES: ISSUES AND CHALLENGES

Before the pandemic, during face-to-face teaching, formative assessment, which is carried out throughout the semester, used to consist of sessional tests in descriptive format, submission of handwritten assignments and power-point presentation by the students. Another important component of internal assessment was the percentage of students' attendance. Summative assessment, on the other hand is done at the end of the semester. It consisted of exams involving expected answers of a descriptive nature, and practical exams with viva-voce.

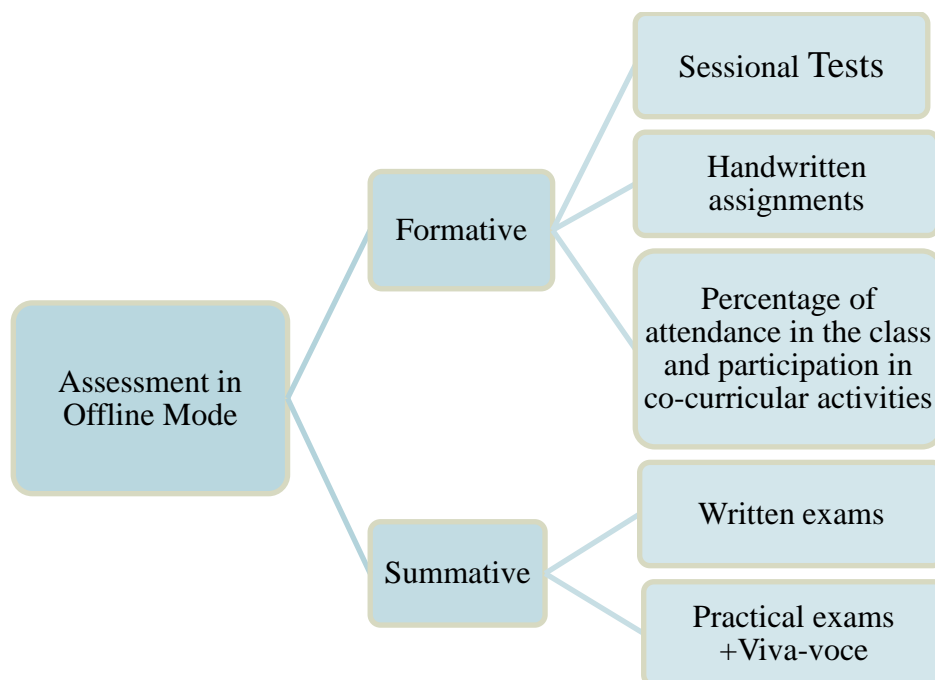


Fig. 2 Assessment in Offline Mode  
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During the online mode, formative assessment was done by way of submitting scanned copy of descriptive sessional tests via email. Soft copies of assignments were sent to teachers on e-mail/WhatsApp within the given time-frame or submitted on Learning Management Systems (LMS) such as Google Classroom/Moodle/Canvas etc. Presentations by the students were either uploaded on LMS or were presented live. The Attendance part of internal assessment was foregone, considering the internet issues and technical hassles.

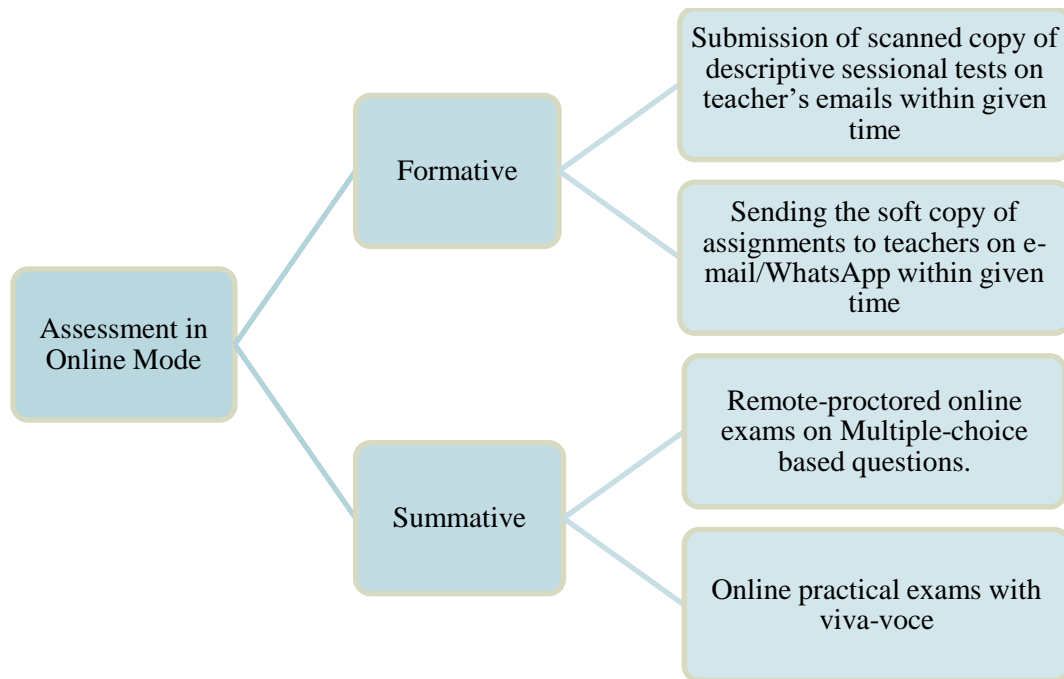


Fig. 3 Assessment in Online Mode

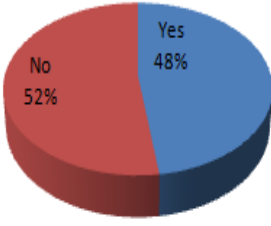
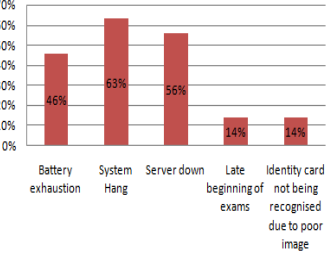
For summative assessment in online mode, remote-proctored online exams were conducted which required the students to have a phone/computer/laptop with a functional camera and microphone and a stable network connection and there are other issues of concern too that need to be taken care of. “This exam is time bounded and proctored, and commonly used in the classrooms. Proctored exams can also be done remotely by using various learning management systems such as Canvas and Sakai. In addition, ProctorTrack software can also be used for remote assessment by using webcams to track student activity during exam time to assist the instructor whenever suspicious actions are taken by the students. But Remote proctored exams are often more stressful for students than in-person proctored exams which would affect the student performance adversely. Remote proctored exam requires well-established infrastructure setup, software, and hardware, both on the instructor and student side. In addition, the application software such as ProctorTrack could create “false positive” flags that mislead the instructor. In remote proctored exam failure of software, hardware, or internet connection could be experienced. Hence, contingency plan should be designed before the exam is started. Due to personal or cultural reasons students may not be willing to stay under the camera supervision. If a student faces technical difficulties on the system during exam time, supporting the student and fixing the problem remotely will not be easy” ([Rutgers, 2020](#)).

Similar concerns were expressed by the students during their interview as shift to online mode using LMS like Google Classroom, Abhimanyu etc. caught the students unprepared and presented several challenges before them. Practice of academic dishonesty was also very common due to various reasons such as ease in doing cheating, lack of preparedness for new pattern of exam, fear of failure inter alia. Various measures were used by the students to get better grades which are a clear indication of rampant academic dishonesty and systemic failure to conduct fair, valid and reliable assessment.

#### 1.4 STUDENTS' DIFFICULTIES AND PREVALENCE OF ACADEMIC DISHONESTY

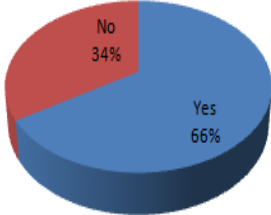
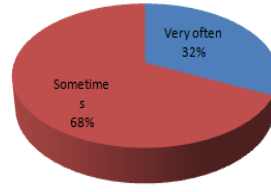
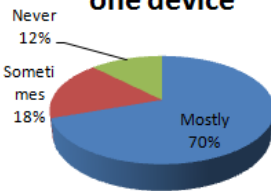
Conversations with various students about the online classes and exams clearly indicated that they struggled in the online mode not only during classes which entailed long screen-hours with monotonous and non-interactive lectures, but also during formative and summative assessment. The aforementioned 14 prompts were identified to conduct semi-structured interviews of the students to gather qualitative data which was analysed from the notes which were taken immediately after the interview. The broad patterns observed from the analysis of data are presented in the table below. Analysis corresponding to 13 prompts is present here and 1 prompt, which was about seeking the preference of teachers and students about the alternative assessment strategies, has been presented separately after the analysis of teachers' concerns.

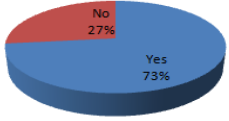
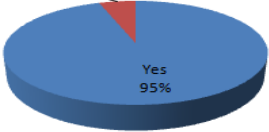
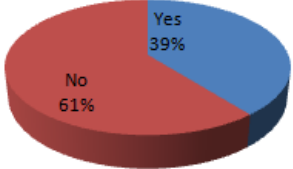
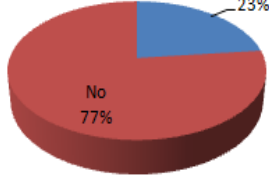
Sr. No.	Prompt	Analysis of Students' responses	Chart								
i.	<b>Network issues</b>	Out of 56 students, 48 (86%) students stated that they faced network issues very persistently during classes as well as submissions for assessment and remote-proctored final exams. 8 (14%) students expressed the view that they faced network issues occasionally. It was also found that the students from rural areas faced network issues on a regular basis and students from coastal areas faced acute network crises due to weather conditions.	<p><b>Network Issues</b></p> <table border="1"> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Persistent</td> <td>86%</td> </tr> <tr> <td>Occasional</td> <td>14%</td> </tr> <tr> <td>Never</td> <td>0%</td> </tr> </tbody> </table>	Category	Percentage	Persistent	86%	Occasional	14%	Never	0%
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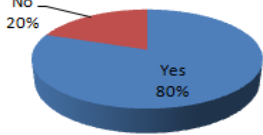
<p>ii.</p>	<p><b>Non-availability of laptop/computer</b></p>	<p>Apart from the network issues, non-availability of laptop/computer was also a major hindrance for students because as many as 55% didn't have it. Though around 80% students had smartphones but creating assignments, presentations, practical record files via smart phone wasn't an easy task and many features of various apps were not available on smart phone though available on computer. Thus both formative and summative assessments were adversely affected for the students who did not have computer. Approximately 20% students did not even have a smart phone – consequently, online assessment posed greater difficulties for them.</p>	<p><b>Availability of laptop/computer</b></p>  <table border="1"> <caption>Availability of laptop/computer</caption> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>48%</td> </tr> <tr> <td>No</td> <td>52%</td> </tr> </tbody> </table>	Response	Percentage	Yes	48%	No	52%						
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No	52%														
<p>iii.</p>	<p><b>Technical glitches during exam</b></p>	<p>Approximately 63% students reportedly faced the problem of system-hang in technical glitches because the laptop or phone being used was not android or the Windows was not updated. 56% of the students said that they faced issues due to the server of the remote proctoring app going down during the exam. 46% of the students were facing the problem of battery exhaustion because the gadgets they were using were old due to which their battery could not last for a long time or there was an electricity problem in that area due to which they were not able to charge properly. Around 14% of the students said that they received the question paper late as they were admitted late by the proctor or due to some unknown technical problem. Around 14% of the students got late entry as their identity cards could not be verified due to the bad quality of imaging in their phone, due to which the paper could not be begun in time - getting this issue resolved through the examination branch of remote proctoring app helpline number was a time-</p>	<p><b>Technical Glitches</b></p>  <table border="1"> <caption>Technical Glitches</caption> <thead> <tr> <th>Glitch Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Battery exhaustion</td> <td>46%</td> </tr> <tr> <td>System Hang</td> <td>63%</td> </tr> <tr> <td>Server down</td> <td>56%</td> </tr> <tr> <td>Late beginning of exams</td> <td>14%</td> </tr> <tr> <td>Identity card not being recognised due to poor image</td> <td>14%</td> </tr> </tbody> </table>	Glitch Type	Percentage	Battery exhaustion	46%	System Hang	63%	Server down	56%	Late beginning of exams	14%	Identity card not being recognised due to poor image	14%
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		taking process, due to which the question paper could not be attempted completely.											
iv.	<b>Disturbance during exam due to calls, messages, notifications</b>	Another challenge for the students who were attempting remote-proctored online exam was that they received calls in between the exam which caused disruption during the exam. They required to keep the mobile data on due to which they received notifications and messages which was another source of disturbance. Around 52% (29) students reportedly faced disturbance very often due to calls, messages and notifications during the exam while 48% (27) faced this issue only sometimes.	<p><b>Disturbance during exam due to calls, messages, notifications</b></p> <table border="1"> <caption>Disturbance during exam due to calls, messages, notifications</caption> <thead> <tr> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Sometime</td> <td>48%</td> </tr> <tr> <td>Very often</td> <td>52%</td> </tr> </tbody> </table>	Frequency	Percentage	Sometime	48%	Very often	52%				
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Very often	52%												
v.	<b>Response of helpline team during remote-proctored exam</b>	The Administration provided the helpline numbers to the students in case they faced any technical glitches during the exam but probably due to excessive calls, prompt response and immediate solution of the problem by the technical support team was reported by only 28.6% students whereas 23.2% students stated that they received prompt response but solution was delayed. Around 37.5 % students expressed unhappiness over receiving delayed response and delayed solution while 10.7% students claimed that they didn't receive any response from the technical team.	<p><b>Response of helpline team during remote-proctored exam</b></p> <table border="1"> <caption>Response of helpline team during remote-proctored exam</caption> <thead> <tr> <th>Response Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Prompt response with immediate solution</td> <td>28.6</td> </tr> <tr> <td>Prompt response but delayed solution</td> <td>23.2</td> </tr> <tr> <td>Delayed response with delayed solution</td> <td>37.5</td> </tr> <tr> <td>No response and no solution</td> <td>10.7</td> </tr> </tbody> </table>	Response Category	Percentage	Prompt response with immediate solution	28.6	Prompt response but delayed solution	23.2	Delayed response with delayed solution	37.5	No response and no solution	10.7
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vi.	<p><b>Downloaded power-point presentation/assignment</b></p>	<p>During formative assessment related activities, one practice of compromising academic integrity involved submitting downloaded or copied assignments and presentations. Teachers also confirmed this point as they noticed that students submitted exact copies of power-point presentations that were available on internet. Sometimes more than 2-3 students submitted the same assignment and presentations. Around 66% (37) students admitted that they submitted downloaded or copied assignments and presentations while naysayers were only 34%(19).</p>	<p><b>Submitting Downloaded power-point presentation/assignment</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>66%</td> </tr> <tr> <td>No</td> <td>34%</td> </tr> </tbody> </table>	Response	Percentage	Yes	66%	No	34%		
Response	Percentage										
Yes	66%										
No	34%										
vii.	<p><b>Excuse of network error for late submission</b></p>	<p>In many cases and at several times network issues were real but on many occasions, students used this excuse of network problems for late submission of assignments and presentations. This excuse was also used to avail retake in remote proctored examination. Excuse of network issues for late completion of formative assessment activities was reportedly made very often by 32% students and 68% confessed to having used this excuse sometimes only.</p>	<p><b>Excuse of network error for late submission</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very often</td> <td>32%</td> </tr> <tr> <td>Sometimes</td> <td>68%</td> </tr> </tbody> </table>	Response	Percentage	Very often	32%	Sometimes	68%		
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viii.	<p><b>Use of more than one device</b></p>	<p>39 (70%) students admitted that they used more than one device to circumvent the warning flags generated by LMS such as Abhimanyu on switching the browser window during online proctored exams. 18% students accepted that they used more than one device only occasionally while only 12% students claimed that they never used multiple devices during remote-proctored exams.</p>	<p><b>Use of more than one device</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Mostly</td> <td>70%</td> </tr> <tr> <td>Sometimes</td> <td>18%</td> </tr> <tr> <td>Never</td> <td>12%</td> </tr> </tbody> </table>	Response	Percentage	Mostly	70%	Sometimes	18%	Never	12%
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ix.	<b>Use of books/notes during exams</b>	A huge majority of students, to be precise, 41 out of 56 i.e. 73% confessed to having used notes, books or other resources during exam while around one quarter of the students denied having indulged in this practice. This act was done in combination with the Google search option. Thus, students have many options to search for the correct answer.	<p><b>Use of books/notes etc.</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>73%</td> </tr> <tr> <td>No</td> <td>27%</td> </tr> </tbody> </table>	Response	Percentage	Yes	73%	No	27%
Response	Percentage								
Yes	73%								
No	27%								
x.	<b>Google search of answers, use of apps</b>	A whopping majority i.e. 53 (95%) of students accepted doing Google search for answers where apps like Google Socratic played a huge role. Students stated that they used to take pictures of questions, scan them and paste in Google Socratic to find answers during exam. Google search was the most used measure to resort to academic cheating as only 5% (3) denied having resorted to this measure.	<p><b>Google search of answers, use of apps</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>95%</td> </tr> <tr> <td>No</td> <td>5%</td> </tr> </tbody> </table>	Response	Percentage	Yes	95%	No	5%
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xi.	<b>Taking help of family, friends and seniors</b>	Nearly 40% (22) students took help of family members and friends during formative assessment as well as remote-proctored online exam. They made them sit beyond the camera view from where the question paper was visible and sought answers for questions through use of internet resources as well as books and other material. This practice was less common as compared to others as approximately 60% (34) students denied having indulged in this practice.	<p><b>Taking help of family, friends and seniors</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>39%</td> </tr> <tr> <td>No</td> <td>61%</td> </tr> </tbody> </table>	Response	Percentage	Yes	39%	No	61%
Response	Percentage								
Yes	39%								
No	61%								
xii.	<b>Deliberately switching the camera off during remotely proctored exam</b>	Surprisingly, not many students felt the need to switch the camera off during remotely proctored exam in order to do cheating as only 23% (13) students nodded to having done so while a big majority of 77% (43) denied having practiced this. Reason may be the limited coverage span of the camera as only faces of the students were visible and their hands and the entire area in their proximity was invisible.	<p><b>Deliberately switching the camera off during remote proctored exam</b></p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>23%</td> </tr> <tr> <td>No</td> <td>77%</td> </tr> </tbody> </table>	Response	Percentage	Yes	23%	No	77%
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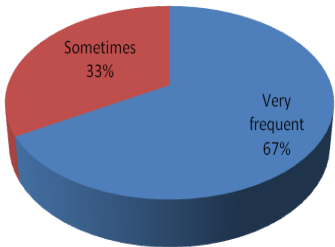
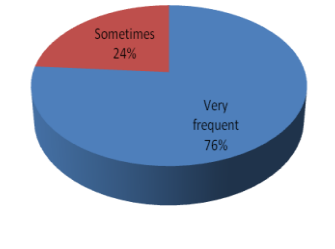
		Though there was an option available with the proctor to pause the exam and request the students 360° view around him/her but it wasn't exercised effectively due to network issues.							
xiii.	<b>Scoring unexpectedly high due to academic cheating and MCQ question paper</b>	Around 80% students felt that some students scored unexpectedly high due to cheating and MCQ format of exams. The students attempting the re-appear exams also came out with flying colours during remote-proctored online exams because of using unfair means while only 20% students felt otherwise. They felt that students scored lower than expected due to network issues, technical glitches and other disturbances during the exam.	<p><b>Some students scoring unexpectedly high due to cheating and MCQ type exams</b></p>  <table border="1"> <caption>Data for Pie Chart: Some students scoring unexpectedly high due to cheating and MCQ type exams</caption> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>80%</td> </tr> <tr> <td>No</td> <td>20%</td> </tr> </tbody> </table>	Response	Percentage	Yes	80%	No	20%
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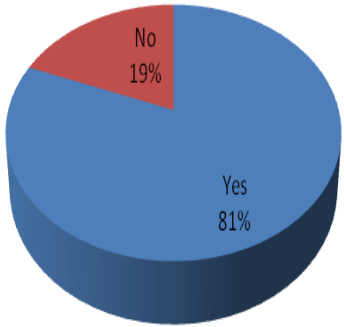
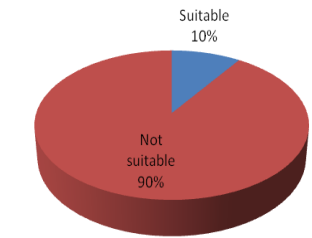
**Table 1- Analysis of Students' responses**


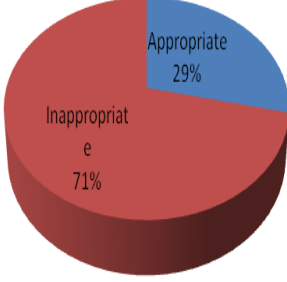
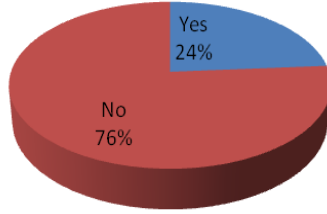
A huge majority of the students admitted having been a part of practices that involve violation of academic integrity. This reality needs an introspection as well as analysis. “Since the risk of cheating is increased when students feel ‘stuck’, offer students an opportunity to ask clarification when it is required. For instance, giving a chance to ask questions within the exam time or provide hints when students are confused on what they are asked” ([McCabe et al., 2012](#); [Rutgers, 2020](#)). This may be one of the possible solutions but there is a need to know the story of teachers' concerns.

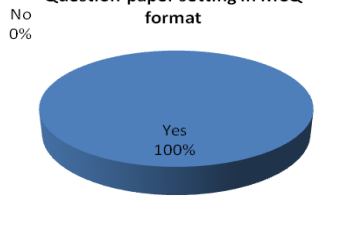
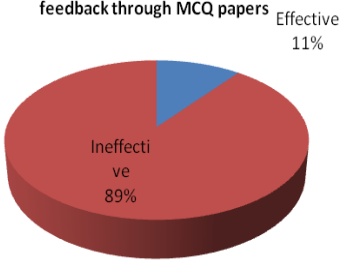
### 1.5 STORY OF TEACHERS' CONCERNS

Just as students encountered various issues and challenges during online assessment and remote-proctored exams, teachers also faced various difficulties which were voiced by them in conversations that were a part of this study. The aforementioned 11 prompts were identified to conduct semi-structured interviews of 25 teachers to gather qualitative data to know the story of teachers' concerns. Out of these 25 teachers, data of only 21 was considered for analysis, keeping in view the fact that it had all the required information. Analysis along 10 prompts is presented in the table below whereas 1 prompt, which was about seeking the preference of teachers and students about alternative mode of assessment, has been presented separately.

Sr. No	Prompt	Response	Chart						
i.	<b>Internet speed and connectivity issues</b>	<p>Not only the students, but also the teachers faced connectivity issues as 67% teachers stated that they faced internet speed and connectivity issues very often while 33% said that this issue was occasional. During downloading of assignments, viewing of live presentations as videos and screen-sharing required more bandwidth. Thus, problems were there during formative assessment activities. This problem was also there during remote proctoring because students' videos were supposed to be live-streamed during the whole final exam. But many times students' videos were not available.</p>	<p>Internet speed and connectivity issues</p>  <table border="1"> <caption>Internet speed and connectivity issues</caption> <thead> <tr> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very frequent</td> <td>67%</td> </tr> <tr> <td>Sometimes</td> <td>33%</td> </tr> </tbody> </table>	Frequency	Percentage	Very frequent	67%	Sometimes	33%
Frequency	Percentage								
Very frequent	67%								
Sometimes	33%								
ii.	<b>Device and storage issues</b>	<p>Many teachers faced device-related issues such as not having laptop/computer at home and they did not have access to the computer lab or the computer kept in the office. Those who had laptop/PC at home faced digital storage issues as multiple assignments, presentations and other records of multiple classes were required to be downloaded for correction and assessment which consumed a lot of device memory. Thus, a huge percentage of teachers, i.e. 76%, faced device and storage related issues very frequently while 24% encountered these issues sometimes only.</p>	<p>Device and storage issues</p>  <table border="1"> <caption>Device and storage issues</caption> <thead> <tr> <th>Frequency</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Very frequent</td> <td>76%</td> </tr> <tr> <td>Sometimes</td> <td>24%</td> </tr> </tbody> </table>	Frequency	Percentage	Very frequent	76%	Sometimes	24%
Frequency	Percentage								
Very frequent	76%								
Sometimes	24%								

<p><b>iii.</b></p>	<p><b>Preventing academic dishonesty by the students was the biggest challenge</b></p>	<p>During the online assessment, whereas one huge challenge was to create meaningful learning experiences in the online mode, an equally big challenge was to conduct fair assessment of learning while being geographically apart. Teachers observed wide prevalence of academic dishonesty by the students by way of copying the assignments, projects, lab work from online resources or class-mates during formative assessment. Marks for attendance were not a part of the assessment during the lockdown phase and students took advantage of this by not attending classes regularly. Teachers could do very little about preventing such practices. Thus, 81% teachers expressed the opinion that preventing academic dishonesty by students was the biggest challenge while 19% said that creating meaningful learning experience was the bigger challenge and assessment challenges were a repercussion of the same.</p>	<p>Preventing academic dishonesty by the students was the biggest challenge</p>  <table border="1"> <caption>Data for Preventing academic dishonesty by the students was the biggest challenge</caption> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>81%</td> </tr> <tr> <td>No</td> <td>19%</td> </tr> </tbody> </table>	Response	Percentage	Yes	81%	No	19%
Response	Percentage								
Yes	81%								
No	19%								
<p><b>iv.</b></p>	<p><b>Difficulties in remote proctoring</b></p>	<p>Teachers felt that nothing substantial could be done to prevent academic dishonesty during remote proctoring as students had too many opportunities to circumvent the invigilation. Many a time students' videos were not available. At times the server was down, and the failure of the proctoring app, slow speed of internet and other technical glitches rendered the teachers helpless during remote proctoring. Thus, around 90% teachers agreed that remote proctoring was not a suitable way of conducting exams while a meager 10% held a different opinion.</p>	<p>Remote proctoring was Suitable way of Assessment</p>  <table border="1"> <caption>Data for Remote proctoring was Suitable way of Assessment</caption> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Not suitable</td> <td>90%</td> </tr> <tr> <td>Suitable</td> <td>10%</td> </tr> </tbody> </table>	Response	Percentage	Not suitable	90%	Suitable	10%
Response	Percentage								
Not suitable	90%								
Suitable	10%								

<p>v.</p>	<p><b>Conducting practical exams in online mode</b></p>	<p>A lot of practical problems were faced in conducting practical exams in online mode for various reasons such as lack of access to science labs, computer labs and network problems during screen-presentations and demonstration using live streaming, and difficulties in maintaining the secrecy of viva-voce questions inter alia. Due to these challenges, conducting practical exams in online mode was not considered appropriate by 90% teachers; only 10% teachers didn't find this problematic.</p>	<p>Conducting practical exams in online mode</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Appropriate</td> <td>10%</td> </tr> <tr> <td>Inappropriate</td> <td>90%</td> </tr> </tbody> </table>	Response	Percentage	Appropriate	10%	Inappropriate	90%
Response	Percentage								
Appropriate	10%								
Inappropriate	90%								
<p>vi.</p>	<p><b>Shift to Multiple Choice Question (MCQ) papers</b></p>	<p>A sudden shift from descriptive type question papers to multiple-choice based (MCQs) question papers was made to maintain objectivity and ease of assessment but this caused several problems as both the students and teachers were not oriented towards the same. This change gave way to manifold increase in the use of unfair means without being caught due to remote proctoring. Thus, only 29% opined in favour of this decision while a huge majority of 71% were against it.</p>	<p>Shift to Multiple Choice Question (MCQ) papers</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Appropriate</td> <td>29%</td> </tr> <tr> <td>Inappropriate</td> <td>71%</td> </tr> </tbody> </table>	Response	Percentage	Appropriate	29%	Inappropriate	71%
Response	Percentage								
Appropriate	29%								
Inappropriate	71%								
<p>vii.</p>	<p><b>Efficacy of MCQs in 360° holistic assessment</b></p>	<p>A very small number of teachers believed that MCQ type papers were suitable to conduct 360° holistic assessment of the students; more particularly, these are not suitable for the assessment of writing skills. Thus, only 24% held positive opinion about the efficacy of MCQ based question-papers in 360° holistic assessment while a whopping 76% opined that MCQ based question-papers were not effective for conducting 360° holistic assessment of students' learning and overall personality development.</p>	<p>Efficacy of MCQs in 360° holistic assessment</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>24%</td> </tr> <tr> <td>No</td> <td>76%</td> </tr> </tbody> </table>	Response	Percentage	Yes	24%	No	76%
Response	Percentage								
Yes	24%								
No	76%								

viii.	<b>Question-paper setting in MCQ format</b>	Descriptive type question-paper setting is considered a much easier task by the teachers as compared to MCQ based question-paper setting. Thus, the shift to MCQ based question-papers was an additional workload for teachers. For this reason, 100% teachers who participated in this study agreed that MCQ based question-paper setting was a time-consuming work. They considered it as an additional burden.	<p>Question-paper setting in MCQ format</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>100%</td> </tr> <tr> <td>No</td> <td>0%</td> </tr> </tbody> </table>	Response	Percentage	Yes	100%	No	0%
Response	Percentage								
Yes	100%								
No	0%								
ix.	<b>Diagnosis of learning difficulties and feedback through MCQ papers.</b>	One of the most important functions of assessment is that of diagnosing learning difficulties and providing remedial treatment as well as feedback. This element is somewhat missing in assessment through remote-proctored online assessment in which answer sheets are checked by the machines. Thus, only 11% teachers considered it an effective method of diagnosis of learning difficulties and providing feedback while 89% felt otherwise.	<p>Diagnosis of learning difficulties and feedback through MCQ papers</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Ineffective</td> <td>89%</td> </tr> <tr> <td>Effective</td> <td>11%</td> </tr> </tbody> </table>	Response	Percentage	Ineffective	89%	Effective	11%
Response	Percentage								
Ineffective	89%								
Effective	11%								

**Table 2- Story of Teachers’ Concerns**

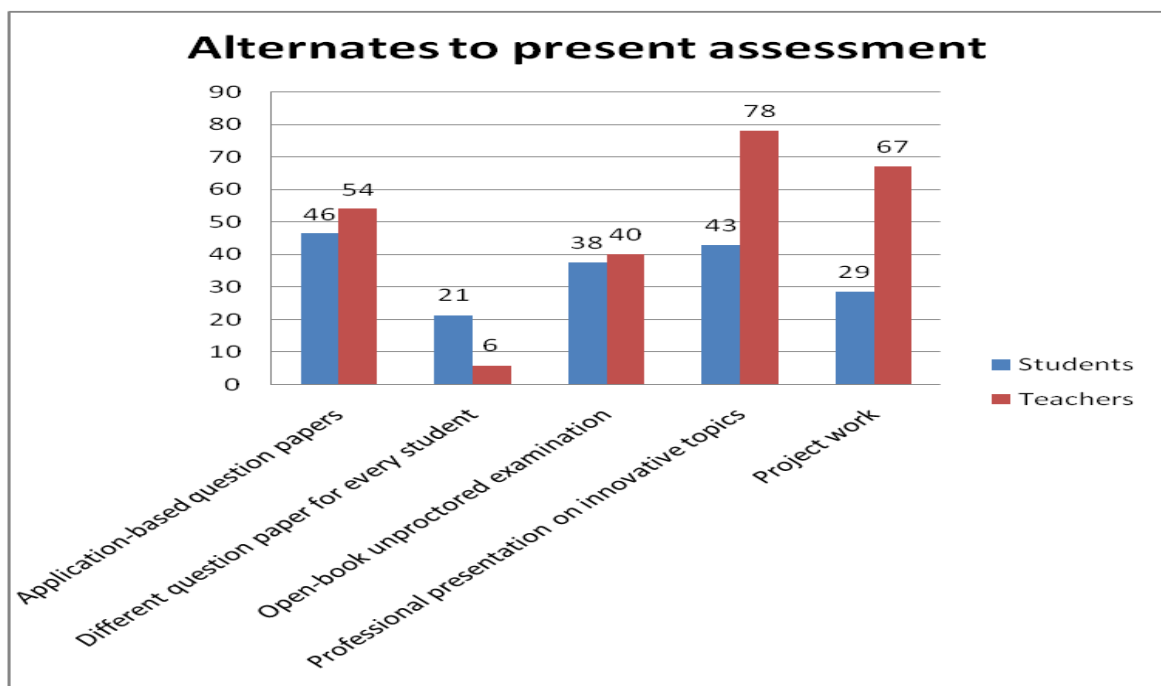
Both the teachers as well as students thus expressed their difficulties in relation to the conduct of assessment through online mode. Some issues were real and beyond control of any individual but some can be addressed by better planning and improved readiness. “Commonly, in remote assessments, the instructor will not be in a position to solve the student’s problem. The problem could arise as a result of hardware or software malfunctions, or due to lack of knowhow on the supporting materials by the student. It is important to consider how to deal with these kinds of problems in advance” ([Hsiao & Watering, 2020](#)). Apart from the technical issues, ethical issues of violation of academic integrity also need due attention, only then reliability and validity of the online assessment can be maintained. Thus there is need to devise such assessment formats where the possibility of cheating is on a much reduced scale even if not minimal. Participants of this study were asked about the possible strategies or remedies to address these issues as online education and assessment are going to stay an important part of our education system even post COVID-19. Some important suggestions were received. Many teachers and students suggested more than one solution, so their responses have been considered in more than one category. In the next section, graphical representation and discussion of suggested alternatives by the participants of this study has been given.



### 1.6 ALTERNATIVES TO THE PRESENT SYSTEM OF ASSESSMENT

At present, the types of questions given for the purpose of formative as well as summative assessment makes it possible to find direct answers from books or online resources. Power-point presentations and assignments can be directly downloaded and copied, especially if they are on traditional topics. Taking this into consideration, some innovative teachers designed such application-based question papers which can neither be searched from Google nor from books as they can be answered correctly only if a student has the right understanding of the topic. Thus, formulating application-based question papers was one of the remedies suggested by around 54% teachers as well as 46% students who participated in this study.

Another solution put forth as a suggestion to prevent cheating during exams was to give a different question paper to each student. This suggestion was prescribed as a solution by only 6% teachers and 21% students. Though this seems a less popular remedy because of the practical difficulties in framing so many question papers, yet it could be a very effective solution. Some such experiments were done during formative assessment by devising multiple choice question papers using Google forms and applying the ‘shuffle question order’ option. The feedback received clearly indicated that this method was effective in preventing cheating during exam. Open-book unproctored exam was also suggested as a possible remedy by 40% teachers and 38% students. “These assessments are conventional and used under the traditional teaching-learning process also. However, when there is no possibility of proctored exam, take-home exam can serve as the main assessment method to cover the learning outcomes. To make sure that the assessment is done by the student, online oral presentation, and question can be included. The challenge of take-home-exam is preparing more conceptual questions that cannot be found directly and easily in any type of sources, such as the internet and textbooks”





‘Professional presentations on innovative topics’ enjoyed a huge popularity among both teachers (78%) and students (48%) as a possible alternative that can prevent cheating and better reflect learning outcomes. “These assessments can be done in audiovisual and are good demonstration of the students’ understanding especially when presentation is conducted online” ([Guangu et al, 2020](#)). The presentation can be done using any web based online conferencing system, such as Google Meet, ZOOM, MS Team, Webex Meet etc. Here the major challenge is to give such topics for presentations on which readymade presentations are not available on internet. Another suggestion to have fair assessment is through project work which was supported by 67% teachers as well as 29% students. Handwritten assignments were also suggested by some teachers and students. Therefore, it can be said that by applying one or more of these strategies, it can be hoped that better assessment of learning can be done.

## 1.7 DISCUSSION

A research paper by Oyedotun (2020) titled “Sudden change of pedagogy in education driven by COVID-19: Perspectives and evaluation from a developing country” comes forward with similar claims such as “as students are unable to submit assignments when due, lecturers are unable to keep up with their schedules because of either power-cuts or internet problems or inability to use technological tools to get work done in a timely manner, they were compromising with deadlines and even with the standard expected of their delivery because of other constraining factors they are confronted with. Reduced student–teacher engagement may be the major reason as many students no longer engage in class discussion as they do in the traditional face-to-face class and there is often little or no feedback when questions are asked. As a result of their lesser investment, attention or effort on their participation, they will only accomplish little in their learning.” He also adds that teachers in online mode have “limited opportunity for monitoring assessments, which has restricted many lecturers/tutors to the use of multiple-choice questions (MCQ)”. Further complicating the situation is the issue of “malpractices as with the online method of testing and the realities of many students’ inability to utilise video services during some live class exercises and tests because of the limitation of the technological devices, students could receive assistance and help that the instructor may not be privy to”.

This paper, on the basis of other sources too, suggests remedial measures in this regard is “Alternative assessment as Traditional forms of assessment are getting criticised these days because they leave students with a crammed knowledge for marks and not the skills they need for proficiency ([Ali, 2020](#), [Czerniewicz, 2020](#), [Ismail et al., 2014](#), [Magalhães et al., 2020](#), [Zhang et al., 2020](#)). In the light of this current pandemic, alternative forms of assessments should be considered and embraced because of their real benefits and positive outcomes. Assessments can be in the form of virtual presentations, interaction models, oral presentations, creative projects using 3-Dimensional modelling and graphics, skits or plays, blogpost journaling, one-to-one conferencing, and so on ([Ali, 2020](#), [Gipps and Stobart, 2003](#), [Lavy and Naama-Ghanayim, 2020](#)). These forms of assessments can be used to measure authenticity and performance ([Gipps&Stobart, 2003](#)) and could thus be a kind of a relief measure in this time of rapid pedagogical transformation” (Oyedotun, 2020).

From the above discussion, it can be safely concluded that the problems in the traditional system of assessment were being felt worldwide and the concerns for devising some alternative modes of assessment have also been expressed by numerous scholars time and again. The present paper confirms these global concerns and talks about possible methods of alternative assessment. Major conclusions are given briefly in the next section.

## 1.8 CONCLUSION

The main challenges as exemplified by the issues around online education that also impact the domain of online assessment and identified from the analysis of students' responses were lack of availability of suitable devices equipped with camera and microphone, lack of stable and high-speed internet connectivity, sudden shift to objective-type from subjective-type question papers, technical glitches during remote-proctored online exams, too many assignments and presentations which required laptop or computer, problems in timely submission of sessional tests and assignments because of poor uploading speed, limited data packs, incoming calls, messages, notifications in between the exams causing disruption, difficulties in connecting to technical support team during exams. Challenges identified from the analysis of teachers' responses included intense academic cheating by the students by way of submitting downloaded presentations, copied assignments and answers, additional workload of creating objective-type question papers, limited efficacy of objective-type exams for diagnosis of learning difficulties and 360° holistic assessment, lack of commitment of students to academic integrity and inability to check malpractices during remote proctoring. Suggested remedies included formulating application-based question papers, setting different question papers for every student, open-book unproctored examination with conceptual questions, seeking professional presentations on innovative topics and project work. It is hoped that by applying one or more of these strategies, better assessment of learning can be done.

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