



JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Online Education and Examination System in India During COVID-19 Pandemic: An Analysis

Sambit Chatterjee
Ph.D. Research Scholar
Department of History
Jadavpur University, Kolkata, India

Abstract: The covid-19 pandemic jeopardized the academic calendars as the educational institutions closed across the world, however, most educational institutes shifted to online learning platforms to keep the academic activities going. But certain aspects of e-learning like preparedness, designing and effectiveness of e-learning is still not clear specifically in developing countries like India. In developing countries like India there are various constraints in the path of digital learning like lack of access to the gadgets and infrastructure required to access digital learning, non-availability of continuous internet connection, lack of funds, technological challenges, and absence of a Learning Management System (LMS) etc. Moreover, the problem became more severe in the context of conducting examination in the online mode. Majority of the students, teachers and staffs dealing with the examination system of the educational institutions and universities faced with difficulties while conducting examination in the online mode. In this paper, an attempt has been made to understand the online education and examination in post pandemic India. A lot of journal articles and newspaper reports have been reviewed in order to analyze the prevalent situation in this country. This paper provides a brief background on online examinations, followed by the results of a systematic review on the topic to explore the challenges and opportunities. An explication of results from various research papers have been followed and eight key themes have been explored: Perception of the Students regarding Online Examination, Mental Health and Anxiety issues of Students, Cheating and resorting to Unfair Means in Online Examination, Perception of staff members of the examination departments and faculty members on online examination, Performance of the Students in online examination, Authentication and security, Interface design, Technology issues. Moreover, the various advantages and disadvantages of the online examination has been dealt with in this research work and relevant suggestions have been framed for smooth running of this system.

Keywords: Examination Departments, Online Examinations, Interface Design, LMS, Internet Connection, COVID-19 Pandemic

1. Introduction:

The inception of an unprecedented pandemic in 2020 created a major upheaval across the globe and like most sectors of business and transactions, academic institutions also had to face the health crisis and had to take protective measures in order to curb infection spread. The human-to-human direct transmission of the new COVID-19 or novel coronavirus introduced a new challenge to the academic institutions where mass gathering of students and teachers alike was the common way of human interaction and knowledge dissemination. Institutions across subjects, departments and specializations had to either shut down operations completely in order to avoid mass gathering or shift to virtual mode of learning through the introduction of a Learning Management System (LMS) (Bao, W. 2020). The traditional way of education in India had to change, evolve, and resort to unforeseen methods and implement them in order to keep the academic operations relevant and unhindered. The initial outbreak of infections in China, the presumed metropole of COVID-19, in late 2019, was not seemingly alarming to rest of the world, but by February 2020, just within 3 months of the initiation of a new viral outbreak, schools and institutions in China began to close down and restrictions on human movement were imposed. By March 2020, India went under a complete lockdown amidst which financial, social, and institutional chaos and

mismanagement surfaced, since there was no instruction from the government on how to act under the unprecedented situation and no administrative or institutional framework could take decisions on how to keep daily operations normal and functional.

According to the statement from UNESCO, nearly 186 countries had imposed a national lockdown and restrictions by the end of April 2020, which had affected almost 73.8% of the enrolled students worldwide (UNESCO, 2020). At the time, humankind had no vaccine or cure for the diseases caused from the infection, therefore the only way to slow the spread and break the chain of infection was to implement restrictions and lockdowns and due to this, millions of students and learners in India and the world got affected and the academic operational framework had to be reshaped and revised.

During this early stage of the pandemic since physical classes and interactions in schools and colleges were closed off indefinitely, therefore the academic institutions had created a new digital learning environment using and implementing the existing technology like LMS or Internet of Things (IOT). This digital reform within the academic sector somewhat helped the students and every agent related to the academic sector had to pursue creative and digital ways to stay connected and keep the academic activities going which proved to be a propellant and a virtue in disguise for the academic sector. In this context it is important to note that success of digital learning and digital distribution of academic materials is largely dependent on digital access, availability of internet, access to connecting devices, and knowledge of associated technology. The e-learning and assessment environment is widely different compared to the traditional chalk and talk classroom method regarding the motivation, satisfaction, and interaction of the learners (Bignoux S. & Sund K. J., 2018). The academic institutions in India had initially stopped operations and then abruptly shifted to online mode which was not equally and properly implemented throughout the nation creating a digital divide. With time, e-learning became regularized through LMS, and other software-based solutions and it continues to be relevant as new waves of infections are still prevalent in India. In this current scenario, there have been both benefits and drawbacks of online education as well as online assessment and evaluation system. Through online mode, in a video conferencing medium or implemented LMS thousands of students can attend a lecture, seminar or virtual class and similarly examinations can be held for a large number of students virtually at the same time, cutting cost, saving time in mobility and distribution and increasing overall efficiency of the system. Certain institutions have also developed an online examination software interface which proved to be the technological and pragmatic alternative to the conventional course-end or term-end summative evaluation process designed to test the student's garnered knowledge, retention level and application of the subjects learned.

This paper attempts to gather and consolidate relevant information on online examination and evaluation process adopted in academic institutions in a post-pandemic world. The paper attempts to learn how well the online examination system has been implemented by the institutions and teachers and also how profoundly this new system have been accepted by the students. The online examination system has been evaluated through the exploration of relevant contemporary literature following certain methodology and the benefits and drawbacks of the system have been highlighted. The paper elucidates the inception of online examination with a brief introduction to the pre-pandemic scenario in India and therefore it attempts to explore the relevant themes and findings related to online examination through studying relevant literature on this context. According to some research studies, the online examination process sometimes can distinguish between pass and fail with better accuracy (Ardid M. et al., 2015). Albeit there are benefits in implementing online evaluation, cheating is a common occurrence and regular phenomenon in e-evaluation mode (Jordon A., 2001). From implementation of high degree of digital monitoring and technological solutions to developing ethics and integrity among students, the problem of cheating needs to be addressed which will further enhance the authenticity of online examination and therefore will further aid in the development of this swift alternative assessment process. One of the primary objectives and central idea of this paper is to understand the shift of examination system from traditional offline to online mode and thereafter examine, analyze and understand the advantages or disadvantages associated with the new online evaluation and assessment process and henceforth forward suggestions for incorporation and smooth running of the online examination system.

Present status of work of the teachers and the Staff members of the Examination Departments of Universities during online Examination:

The direct responsibility of the staff members of the examination departments of the universities/educational institutions have increased a lot since in most of the cases they have to upload the questions on time in the university websites and any delay or technical glitches causing delay has to be solved by them (either by themselves or with the help of third parties). The teachers now do not have to collect the question papers physically and distribute those among the students. In some of the universities the teachers at times download the question papers directly from the website of the concerned university and share it mostly via WhatsApp groups. It is the responsibility of the examination departments in most of the universities to check whether the scripts have been submitted in time via mail and download those. Then they have to mail the downloaded scripts to the concerned teachers for evaluation. The result publication process have become faster as the marks are submitted digitally and hence there is no need to physically type and enter the marks in the software. (If you feel you may include this)

1. 1 Objectives:

- Analyses of the online examination system during a pandemic scenario
- Effects and outcome of shifting towards e-assessment in India in the onset of a Pandemic
- Understanding the advantages and disadvantages of the online examination system under present scenario
- The implementation of online examination in India and it's reach in both urban and rural India after the onset of Pandemic
- Understand the reception of the new e-assessment system in India among students, teachers and every agent associated with the academic sectors and operations in India

- Forwarding relevant suggestions for attempting to do away with the major disadvantages of the online examination system.

2. **Methodology:**

- 2.1 **Research process and Literature review:** In order to address the objectives of this paper, extensive literature review has been done and the PRISMA approach has been followed in case of the selection of the articles (Moher D. et al, 2009). The keywords required for the relevant literature was framed through the incorporation of MeSH (Medical Subject Headings) terms such as: (Online or Digital) and (examination or evaluation) and (Indian University or Higher education system). The online databases that were enquired through this method were Google Scholar, Elsevier, Education Database (ProQuest), Educational Research Abstracts Online (Taylor & Francis), and Scopus to name a few. The selection of articles and papers was done on certain parameters like the time of the study was strictly considered to be post-pandemic or after the inception of the COVID-19 outbreak in India and only peer-reviewed journal articles and papers on online education in post-pandemic India was considered. Any literature based on non-higher education was excluded as the present study only focuses on the problems faced and solutions adopted by the higher education system in India, regarding online examination and evaluation process at the onset of a global pandemic. It is also studied through the literatures that how well the online examination system has been implemented in case of Indian higher education and the benefits and drawbacks of the incorporated evaluation system has also been studied thoroughly.
- 2.2 **Analysis of the theme of literature:** The available and shortlisted literatures were analyzed based on the thematic approach elucidated by Bruan and Clarke (Braun, V. & Clarke, V., 2006). Through this process, the common theme of each individual article has been identified. This process was done through data coding, data familiarization, review of theme, searching of theme and finally naming those themes. The familiarization of data and literature was done at the time of quality review, full text and screening process. All these data were then consolidated to identify the final theme. As a result of this process a total of eight (8) consolidated themes addressing the objectives were obtained which have been discussed in following section.

3. **Results and Discussion:**

Under the present study a total of Twenty-Four (24) papers and articles that had fulfilled the selection criterion have been selected and shortlisted following the PRISMA approach. The themes obtained from the analysis of all these literatures following the prescribed methodology have been explained and discussed accordingly.

- 3.1 **Perception of the Students regarding Online Examination:** Students mostly prefer online mode (78% of all respondents) of examination as well as online education system. Some advocated for a hybrid mode where offline classroom teaching has been preferred but examination has to be taken in online mode. Primary reason for such preference towards online examination among students was due to better speed and concentration, ability to edit and modify responses on digital medium, ease of use of the software or the interface and convenience of selecting the examination environment at will. Students perceive the idea that online education and evaluation systems provide a better understanding and learning opportunity and online examination is an authentic assessment process with transparency and broadens the reach and periphery of education and evaluation system. The online examination and e-evaluation process allows a learner the flexibility of a remote based learning and being evaluated faster in a more efficient manner while residing at any corners of the globe, which reduces the time devoted towards physical movements of papers and offline proceedings and makes the system swifter and more efficient.

Students explained that online examination saves the time (78% of all respondents) needed for mobility and transportation of documents and physical presence at examination location. Alongside they believe that this mode of evaluation is more economical for the students (80% of all respondents) providing them with better comfort and convenience. The online system provides the flexibility to be anywhere during the examination process according to the convenience of the examinee and there is better transparency in having a remote based evaluation as questions are securely and virtually delivered to each student individually and the results are authentic since there are lesser chances of having answer scripts mishandled, lost or other common problems associated with written paper-based scripts. Another common problem associated with paper based conventional evaluation process is delay in delivering the results and this can be partially addressed through the online examination process as the transfer and delivery of answer scripts for evaluation is done remotely and no time is lost in handling, maintain or delivering the physical documents and therefore the result declaration process is swift, transparent and becomes more efficient.

Alongside all the benefits of the online examination system, there are still certain limitations that need to be addressed. Majority of the students participated in this study revealed (74% of all respondents) that although they believe online evaluation process is swift and transparent, there is more chance of cheating and resorting to unfair means. Nearly half (46% of all respondents) believed that in the absence of a proper Learning Management System (LMS) in most educational institutes in India, the lack of Information Communication and Technology (ICT) skills can somewhat affect their performance in online examination as not everyone is familiar with the new online system and may face difficulties in downloading or uploading questions and answer scripts following the prescribed guidelines.

Students perception on Online Examination

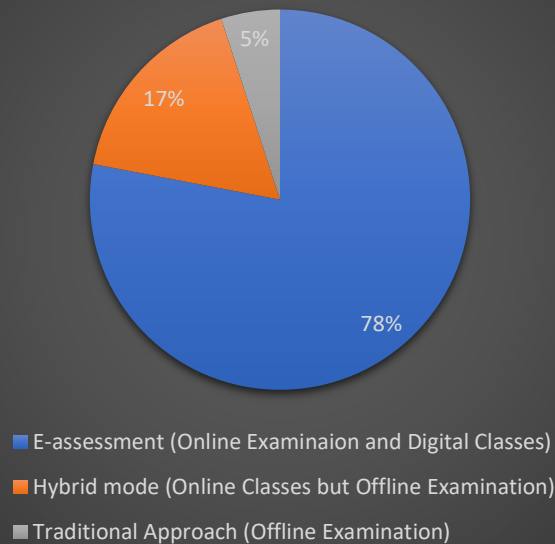


Chart 1: Student's Perception regarding mode of Examination

About 22% of students faced issues with internet connectivity, 30% had issues with typing speed as well as time management and about 12% students reported issues with using the online examination interface. This may cause delay in the examination process and students may lose time or get nervous since they are not accustomed to the digital software and mediums and none of them reported to have enough time or training to get familiar with the systems involved.

Drawbacks of e-assessment

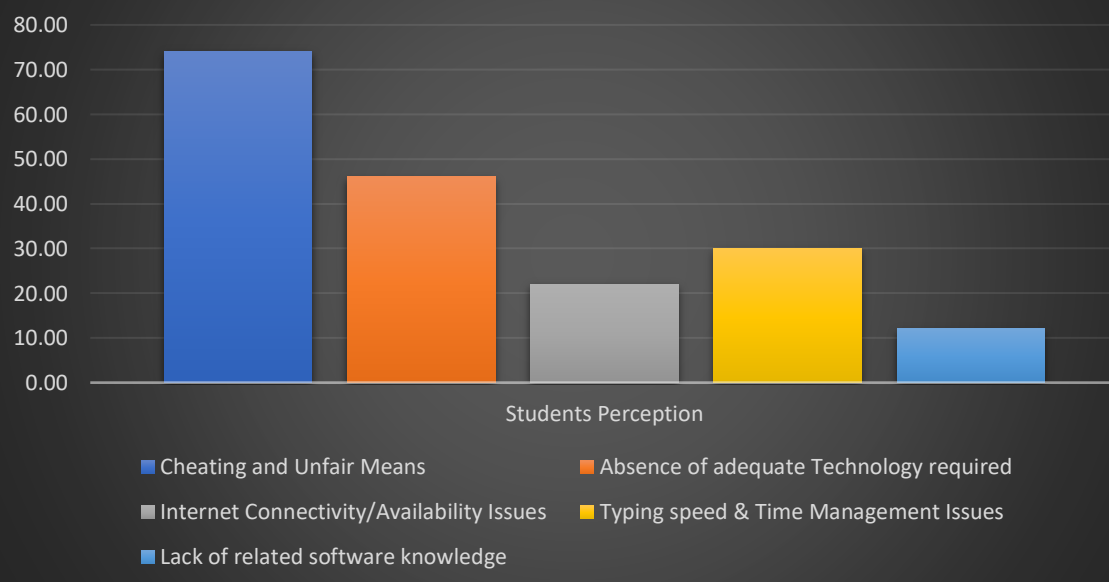


Chart 2: Drawbacks of online examination as reported by the respondents

3.2 Mental Health and Anxiety issues of Students: Majority of students (76% of all respondents) participated in this study reported that they had experienced less stress and anxiety in an online examination session compared to the conventional pen-paper based examination system. They mostly enjoyed the convenience of giving online examination from their preferred location and situation and this made the students more relaxed and focused since the examination environment was neither alien nor stressful to them. The absence of other students and an invigilator further helped the students in concentration and having

increased focus. However, the anxiety and stress level among students in online examination was not conclusive and sometimes inconsistent feedbacks were reported. Nearly 12% students as mentioned earlier did not prefer online examination since they were not familiar with typing and the modified examination interface system and since no training was provided to them to adopt to the new system, they remain skeptical and thus experienced higher level of anxiety regarding attending the examination and submitting the answer scripts properly. Other forms of anxiety and apprehension among students regarding the online examination system in India was reported in nearly 82% of the respondents who otherwise may prefer the online evaluation process, but still are constantly worried regarding internet availability and internet getting disconnected, inconsistent speed of internet, electricity, or power outage, typing speed and technical hardware related issues during the online examination process.

Alongside, some physical health issues have also been reported by the students, faculty as well as staff members. Continuous staring towards the computer or smartphone monitors and screens are creating eyestrain and resulting in dry eye and Computer Vision Syndrome (CVS). This is a major health issue within a pandemic ridden digitized society where in order to curb one infection, other major health issues related to eye and bad postures from prolonged sitting are being invited. Prolonged sitting in front of digital devices has become common to every members of the academic society and hence health hazards like obesity, bad posture and related problems, which were never directly associated to academic sector and setup, may keep on rising in the future.

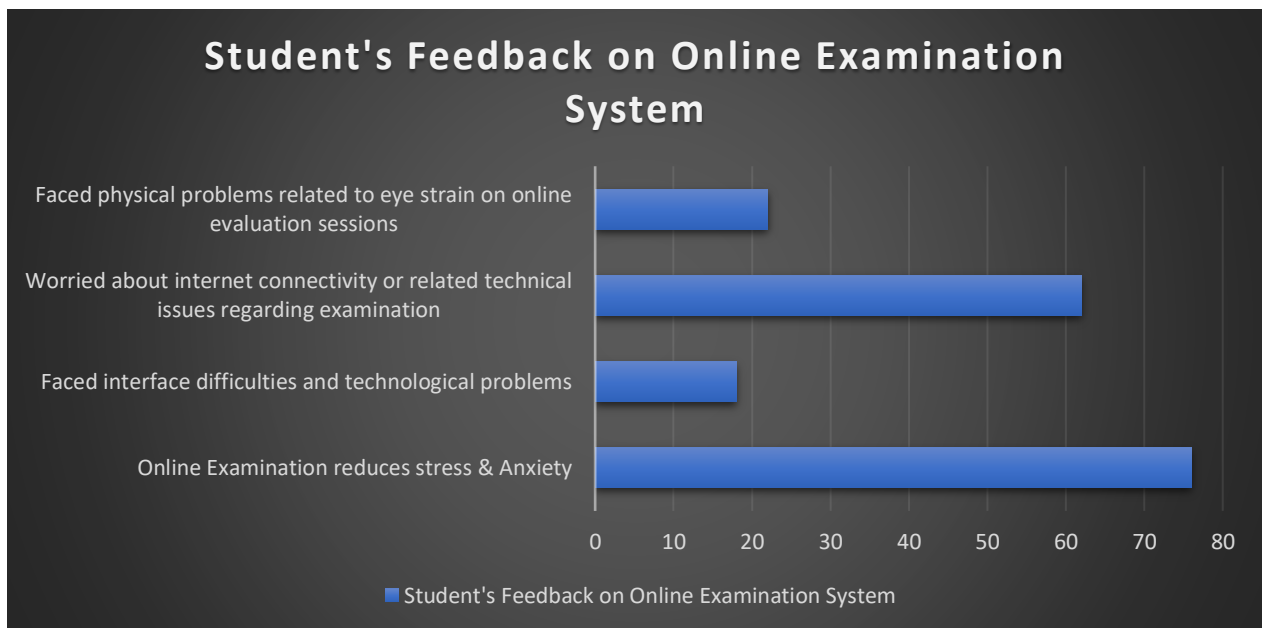


Chart 3: Student's feedback on Online Examination System

3.3 Cheating and resorting to Unfair Means in Online Examination: Throughout this study across all literatures reviewed, students unanimously agreed (74% of all respondents) to the fact that cheating and resorting to unfair means is prevalent in online examination process and this needs to be addressed in order to make the system transparent and authentic. Therefore about 22% of respondents who never preferred the online evaluation process, believed that online assessment and evaluation process is unconscionable given the absence of a proper LMS or tools required to remotely monitor each examination session. Majority of students mentioned that cheating is easier in an online examination since none of the students are being digitally monitored and a greater degree of technical supremacy is required for the educational institutions in order to implement a sandbox style examination software process along with live audio and video monitoring during online examination. Although some tools and effective measure have been implemented from time to time in order to mitigate the occurrence of cheating, still there are too many variables in an online examination setup that needs to be controlled. Several factors like use of devices like calculator or cellphone, unauthorized access to the internet for answers, access to other people during online examination and absence of an examination proctor cannot be controlled and hence there have been other methods implemented to reduce cheating. Some of these protective measures implemented on online examination process are randomization of question and answers, development and updating of questions, multiple sets of questions through random moderation, open book examination system and introducing diversity in question formats and sequences through constant changes.

Student's suggestions to curb Unfair Practices

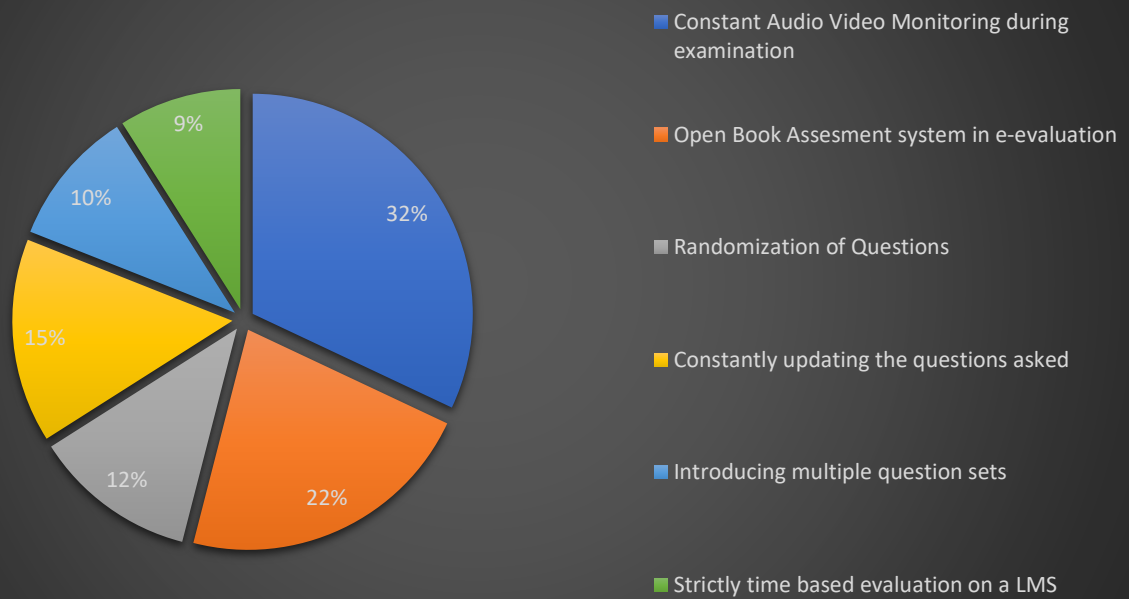


Chart 4: Student's suggestions on curbing Cheating in Online Examination System

In this regard this is also to be noted that cheating and resorting to unfair practices has been studied in light of technical aspects and challenges as compared to the moral and ethical issues of cheating. In case of online examination, the technical aspects of cheating like hardware and software support to cheating and solution to existing problems have been heavily discussed but the social issues and behavioral aspects which may curb future incidences of cheating have not been studied or researched.

3.4 Perception of staff and faculty members on online examination: Most of the staff and faculty members reported that their biggest concern with using online examinations is the reliability of the results of the examination session since it is almost impossible to control whether the student will complete the assignments on his/her own or use additional materials and the help of third parties. There has been concern among the staff and faculty members that online examinations make it easier for the students to resort to unfair means while writing their examinations and this might possibly lead to degradation of the quality of the students. The second most concern of the staff and faculty members have been the reliability of the technology. At times certain unpredictable issues crop up like failure of the software or the internet connection problem crops up which eventually causes an obstruction in the examination procedure eventually leading to the only option of giving more time to the examinees as these technological disturbances are at times beyond the control of the teachers. Often it has been seen the many students take extra time to finish their papers citing slow internet connectivity or problem with their internet connections and there is no way in which a teacher can ascertain the genuinity of the problem. Many of the senior teachers faced problems in adapting with the new technology and often required assistance from the young junior teachers to adapt with the new evolving technology.

Another concern is related to the ease of use of technology for both the teachers and the students. They need a system that is easy and simple to create, manage and mark examinations and which the students can also use with proficient ICT skills. In a study, some of the teachers were of the opinion that marking digital work is easier and preferred it over paper examinations as there has been marked reduction in the utilization of paper. The staff member also opined that handling and transferring digital answer scripts was more efficient and better and overall conducting the digital assessment process was swift, safe, and more organized only if variables like inter connectivity and software or hardware status remain functional and productive.

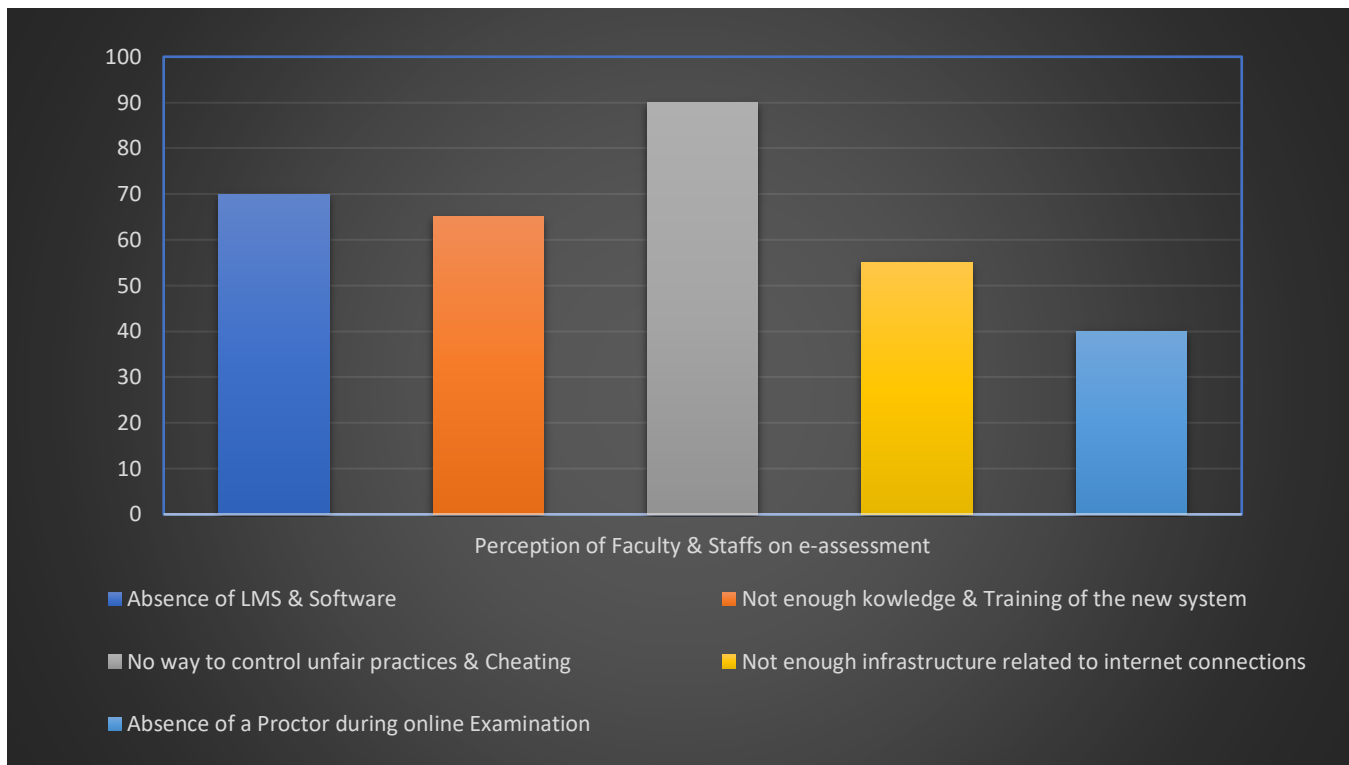


Chart 5: Perception of Faculty & Staffs regarding Online Examination System

3.5 Performance of the Students in online examination: Several analyses reveal that there is a lack of score variation between the results of examination across different administration methods. There has not been any significant difference in the performance of the students in final examination scores across online and traditional examination modalities (Gold & Mozes-Carmel, 2017). A test of validity and reliability of computer-based and paper-based assessment that demonstrated no significant difference reinforced this (Oz & Ozturan, 2018). While considering student perceptions, there tended to be favorable ratings of online examinations. In a study comprising of a small sample of 34 postgraduate students, the respondents had positive perceptions towards online learning assessments (67.4%). In another pre-examination survey, students opined that they preferred to type than to write and felt more confident about the examination and had limited issues with software and hardware (Pagram, 2018). However, with the same sample in a post-examination survey, within the design and technology examination, students felt the software and hardware were simple to use, yet many students did not feel at ease from their use of an e-examination. Some students reported that short online test and quizzes throughout the learning session improved their overall performance as well as helped in memory retention. It has been observed that if students go through short online assessment system throughout their course period, then compared to only one term end overall assessment they manage to perform better, and the learning process and knowledge garnered improved significantly.

3.6 Authentication and security: One of the significant issues for online examination is authentication. The primary reason for requiring physical attendance to proctored examinations is to validate and authenticate the student taking the assessment (Chao et al., 2012). In most of the responses to online examinations the students are required to bring their own device models where laptops are brought to traditional lecture theatres, use of software on personal devices in any location desired, or use of prescribed devices in a classroom setting with the primary goal of each being to balance the authentication of students and maintain the integrity and value of achieving learning outcomes.

Some biometric software uses different levels to authenticate keystrokes for motor controls, stylometry for linguistics, application behavior for semantics, capture to physical or behavioral samples, extraction of unique data, comparison of distance measures, and recording decision-making. Alongside there have been prevalent concerns of the safety and security of the data sent or received by the students. Since there does not exist any one integrated examination portal or software for students, therefore, the answer scripts of related information sent by them has a high risk of getting corrupted due to hardware or software related issues. Internet connectivity issues also contribute towards the digital security and authenticity of the questions and answer scripts. Therefore, although miniscule but still, similar to traditional approach, in online examination also there exists some chances of the data being leaked or misplaced due to current technological limitations present in India.

3.7 Interface design: Interface designs play a key role as interface of a system will impact on whether a student perceives the environment to be an enabler or barrier for online examinations. Both staff and students have identified the incorporation of navigation tools as an essential design feature (Rios & Liu, 2017). They have also identified auto-save functionality as another essential design feature (Pagram et al., 2018). The biggest problem for conducting online examination in a pandemic ridden

India is the absence of a platform or software that can seamlessly handle the question delivery to students, conducting online examination and finally collect and store the answer scripts submitted by the students. Designing such interface proved to be paramount once the need of online examinations were realized and academic institutions are trying to adopt and implement methods accordingly. Some have resorted to designing their own LMS and platforms for e-assessment and e-learning. Several others had to opt for multiple digital platforms to solve the issue at hand. One solution was to use the Google Classroom for conducting examination and storing the answer scripts in Google drive. For online video interviews and examinations, platforms like zoom, google meet and skype is being used which had no erstwhile implementation within the academic sector. Due to such ongoing crises private LMS and e-assessment platforms like Socrative, Skolera, Mercer Mettl Proctoring, ExamOnline, ThinkExam, FastTest etc. emerged within the academic sector with the solutions and although they solved the problem but the question on data integrity, privacy concerns and authenticity of assessment still remained.

3.8. *Technology issues:* None of the studies that included technological problems in its design reported any issues (Bohmer et al., 2018; Matthíasdóttir & Arnalds, 2016; Schmidt et al., 2009). However, one study stated that 5 percent of students reported some problem ranging from a slow system through to the system not working well with the computer operating system but no technical problems that resulted in the inability to complete the examination were reported (Matthíasdóttir & Arnalds, 2016). In many studies, the elder, senior teachers stated that they faced problems initially while adapting with the new technological system but gradually that problem is fading away. According to all the respondents from students to faculty to staff members, everyone reported their concern regarding the technological limitations in India at the time of implementation of mass online examination. There have been issues like internet connectivity, software issues, lack of knowledge to handle software and not adopting well with the new system. Certain areas of rural India have enough schools but lacks proper internet connection and therefore digital divide was the immediate effect of adopting e-assessment mode. Students' dropout rates also increased as many failed to learn and understand the new system in rural India and believed the earlier evaluation process would yield better results. Overall, the race towards digitization of the examination process in India had been uneven and asymmetrical and provided as much benefits as drawbacks.

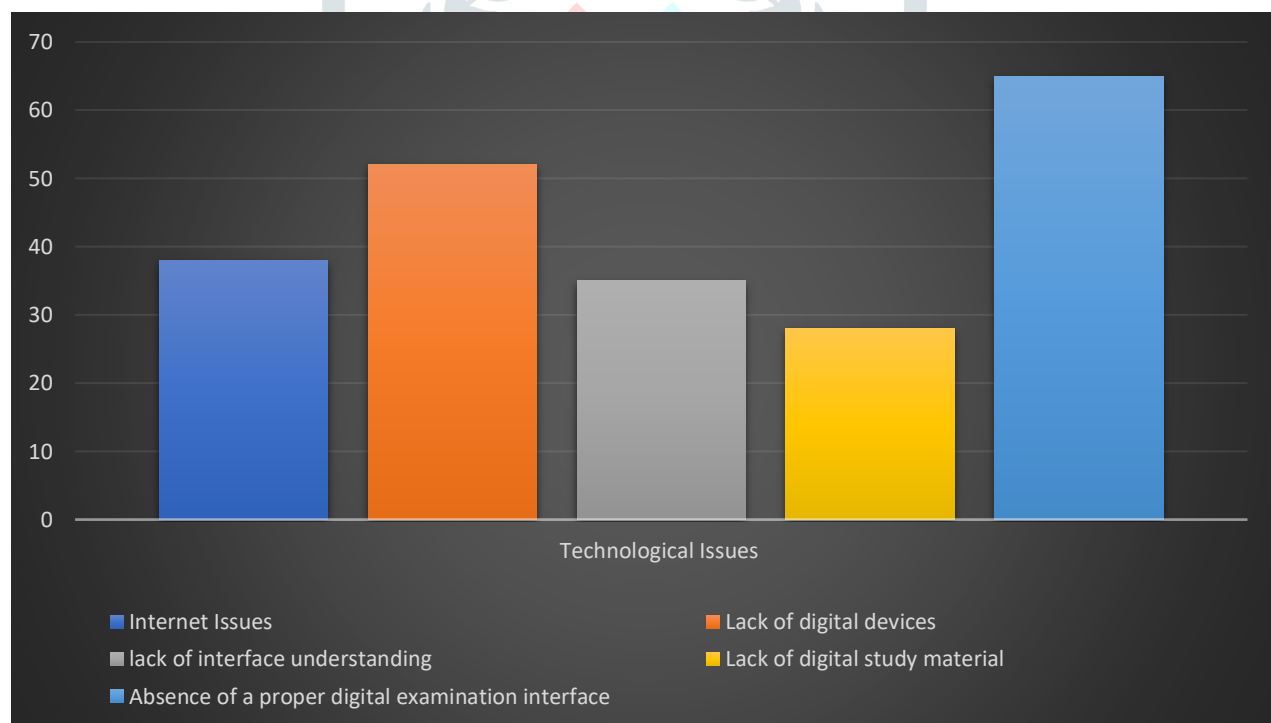


Chart 6: Technological limitations regarding Online Examination System

4. Advantages and Disadvantages of Online Examination:

4.1 Advantages of Online Examination:

- Online examination saves a lot of paper as everything starting from the question papers to the answer scripts all are made digitally. Saving of paper implies saving of trees, an very important environmental resource. Hence, online examinations are to a certain extent environment friendly.

- Saves a lot of energy resources as the students can write the examination from their homes and do not need to physically come to the campus. This saves a lot of energy that would have been used if the students had to travel in vehicles to reach the educational institutions.
- The process of result publication is quite faster as the scripts can be readily distributed among the teachers.
- It has led to technological advancement.
- Students will be compelled to have a clear concept of the topics if the questions are developed like the ones in open book examination system.
- Exam fear and anxiety can be dealt away with since the students appear for the exams from their comfort zone.

4.2 Disadvantages of Online Examination:

- Elderly senior teachers and staff members and some students mainly belonging to the developing areas faced challenges in adopting the new technology as online examination requires access to a proper stable internet connection, scanning facilities, preparation of pdfs etc.
- It led to the creation of digital divide.
- This system struggles to cope with the students resorting to unfair means while writing their examinations.
- Chances of cheating is prevalent and omnipresent under this system.

5. Suggestions:

- Development of online examinations should be oriented towards the same theory of open book examinations.
- In order to restrict the adopting of unfair means, questions should be framed in such a way so that in order to answer those one has to have a clear concept on the topic.
- More emphasis should be laid on framing of conceptual questions.
- Timer can be added to each question so that there is no scope for searching the answer.
- Preference should be given to using university machines instead of the student using their computer, mainly due to issues around operating system compatibility and data loss.
- In order to support the authentication process proper learning management systems (LMS) needs to be developed.
- Frequent workshops and hands-on-training programs should be organized in order to train the staff members in the new evolving technology.
- Introduction of a hybrid system comprising of both online and offline courses will be beneficial for covering a lot more students.
- A fast and efficient internet network must be developed. Students and faculty members can be provided with the gadgets for the smooth running of the system and these can be returned after the completion of the courses.
- A series of processes can be used into place to develop examinations that minimize cheating (e.g., question batteries), deploying authentication techniques (e.g. keystrokes and fingerprints), and conduct post-hoc assessments to search for cheating (Abu Mansoor 2017).
- The Aisyah et al. (2018) model identifies two perspectives to conceptualize authentication systems: examinee and admin. From the examinee perspective, points of authentication at the pre-, intra-, and post-examination periods. From the administrative perspective, accessing photographic authentication from pre- and intra-examination periods can be used to validate the examinee (Butler-Henderson & Crawford, 2020).
- A well planned program should be organized among the teachers and the staff members of the examination departments of the universities and the educational institutions for smooth conducting of the examination in online mode.
- Use of the machines, systems and software provided by the academic institution can be encouraged in order to minimize the risks of technological issues like software incompatibility, data loss, delay in receiving and sending questions and answer scripts and security of the confidential student data sent and received.

6. Conclusion:

It can be concluded that if the online education and examination system can be developed and framed properly then it will turn out to be beneficial for the students. An introduction of a hybrid mode comprising of both online and offline systems of education will help in including a lot of more students who are unable to join certain courses due to the distance from the homes to the educational institutions. Specialized teachers from other universities and colleges can be appointed as guest teachers to deliver lectures via online mode will prove beneficial for the development of the students and the institution. If the glitches associated with the online system can be done away with then it will prove to be quite significant in bringing about positive changes in the education system in the developing countries. In the presence of the online education and examinations system students from one country can learn courses from another country and this will eventually lead to saving of money which were spent in student exchange programs and this saved money can be used for future research and infrastructure building. For smooth conducting of the hybrid mode of learning and examination, a well-planned coordination needs to be established between the faculty members and the examination department of the respective universities and educational institutions.

7. Bibliography:

- Ardid M. et al. : “Online exams for blended assessment. Study of different application methodologies”, *Computers & Education*, Volume 81, 2015, Pages 296-303
- Bao, W. : “COVID-19 and online teaching in higher education: A case study of Peking University”, *Human Behavior and Emerging Technologies*, Volume 2, Issue 2, 2020, Pages 113–115
- Bignoux S. & Sund K. J. : “Tutoring executives Online: What drives perceived quality?”, *Behaviour & Information Technology*, Volume 37 Issue 7, 2018, Page 703-713
- Braun V. & Clarke, V. : “Using thematic analysis in psychology”, *Qualitative Research in Psychology*, Volume 3, Issue 2, 2006, Pages 77-101
- Chakraborty et al.: “Opinion of Students on Online education during the COVID-19 pandemic”, *Human Behaviour and Emerging Technology*, Volume 3, 2021, Page 357-365
- Jordon A. : “College students cheating: The role of motivation perceived norms, attitudes, and knowledge of institutional policy”, *Ethics & Behaviour*, Volume 11, Issue 3, 2001, Pages 233-247
- Moher D. et al. : “Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement”, *Annals of Internal Medicine*, Volume 151, Issue 4, 2009, Pages 249-264
- Muthuprasad T. et al.: “Student’s perception and preference for online education in India during COVID-19 pandemic”, *Social Sciences and Humanities Open*, Volume 3, 2021, Page 1-11
- Noorbehbahani F. et al.: “A systematic review of research on cheating in online exams from 2010 to 2021”, *Education and Information Technologies*, 2022
- Roy & Brown: “Higher Education in India in the Time of Pandemic, Sans a Learning Management System”, *AERA open-SAGE Publication*, Volume 8, Issue 1, 2022, Page 1-15
- Sahoo B. P. et al.: “Covid 19 and Challenges in Higher Education: An Empirical Analysis”, *International Journal of Emerging Technologies in Learning*, Volume 16, Issue 15, 2021, Page 210-225
- UNESCO: “COVID-19 Educational Disruption and Response,
<https://en.unesco.org/themes/educationemergencies/coronavirus-school-closures>, 2020