

Best foot forward through transformed TIL paradigm for effective online learning in India: A survey study with higher education students in Delhi-NCR

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Abstract

The outbreak of COVID-19 enforced an abrupt and complete nationwide lockdown in India that was justified in its goal of preventing the spread of infection in a highly populous country like ours with poor health infrastructure and limited coping abilities. The best option to continue the disrupted education of millions of students was to transfer the delivery of course content through internet-based platforms. This led both teachers and students of regular Indian universities to continue their teaching learning process by rapid conversion of physical classrooms to online classes with both the stakeholders having no previous experience of participating virtually. The main objective of the study is to examine the perspective of students enrolled in higher education institutes, mainly in Delhi/NCR on the effectiveness of online learning mode as compared to traditional face to face classes. The study also analyses whether it has been able to transform the mindset of students towards online learning. The research methodology is quantitative by adopting a survey method for gathering data from a pool of respondents by asking a series of questions in a structured manner. By adopting a convenience sampling technique, 210 undergraduate and 39 postgraduate students had been approached to participate in this survey. The findings and conclusion brought out many hurdles faced by the students even in Delhi and adjoining regions. Knowing e-learning practice is going to play a prominent role in future education and realising an urgent need to redefine contemporary learning pedagogies for effective web-based delivery, this study proposes modification in the customary roles of all three stakeholders, namely, Teacher, Institute, and Learner -TIL

Keywords: Online learning, student perception, teacher, Institute of higher education, learner, COVID-19 pandemic

Introduction

The COVID-19 outbreak that brought the world to a standstill resulted in a complete lockdown of India by mid-March 2020 so as to contain the spread of the pandemic. Although no sector remained unaffected by this action of the Indian Government, the education sector probably was the worst hit, as shutdown on such a short notice halted the learning process. Considering the future of millions of students at stake, in no time the academicians at all levels - be it at school or at higher education, embraced tech-led learning, i.e. online learning or e-learning. Many definitions exist for e-learning, the prominent being, a mode of training enabled electronically and empowered by the use of digital technologies (such as CD-ROMs, internet, DVDs, intranet, etc), that is independent of time and place, can be delivered as live (synchronous) or as pre-recorded (asynchronous) sessions (Fee, 2005; Abbad, Morris & de Nahlik, 2009; Algahtani, 2011). There are numerous well-accepted benefits of e-learning such as better accessibility to higher education, cost and time advantage and flexibility for students to pursue education at their pace along with managing official work or home responsibilities (Oye et al., 2012; Pasha & Gorya, 2019).

India's higher education encompasses education pursued (a degree/diploma) in any field of Science, Engineering, Arts, Commerce, Architecture, etc., after completion of 12 years of schooling. Therefore, Graduation, Post-Graduation, M. Phil, MBA, Ph.D. as well as Certificate, Diploma or PG Diploma are included under higher education definition.

University Grants Commission (UGC) under the aegis of the Ministry of Human Resource Development (MHRD) is the statutory body that is responsible for maintaining education standards in Higher Education Institutions (HEIs) in the country. As per the All India Survey of Higher Education (AISHE) report, absolute enrollment in all HEIs (993 universities + 39931 colleges) in the period 2018-19 corresponded to 3.73 crore students which were taught by 14.16 lakh faculty (AISHE report, 2019). Training such a large number of learners is a mammoth task for any HEI with its limited campus and resources. Therefore, one would have expected that with the advancement in information technology and rapid progress in online learning in the rest of the world, this learning style would be adopted quickly by the Indian HEIs as well. However, in India, the e-learning culture is still not popular and higher education is delivered in a traditional face-to-face (F2F) manner. Aversion towards online learning could be majorly due to the non-availability of infrastructure rather than reluctance on the part of educators and students to change their existing teaching-learning methodologies. A National Sample Survey carried out by the Ministry of Statistics & Programme Implementation, Government of India, for the period of 2017-2018 on 'Key Indicators of Household Social Consumption on Education in India' (Key indicators, 2018) revealed the disparity that exists in the proportion of rural and urban households that have access to computers (4.4percent versus 23.4percent) and internet facility (15percent as against 42percent). In fact, only 8percent of the population

(between the age group 5 and 24) that is in the process of attaining formal education can boast of both a computer and a stable internet connection. Another important factor that could be affecting the adoption of e-learning is the students' self-motivation and their engagement in a faceless environment (Nehme, 2010; Artino, 2008; Keller, 2008).

The main objective of this study was to find out the effectiveness of online learning from the learner's viewpoint, who in lieu of COVID-19 were suddenly shifted from traditional to online mode of learning. An additional objective was to assess whether this unexpected experience has transposed the mindset of students towards this mode of learning. If the learners can foresee the value of this pedagogy they might opt for online education, resulting in achieving the Gross Enrolment Ratio from the current 26.3percent (2018) to 50percent by 2035, as targeted in the New Education (NEP, 2020).

Research Methodology

Questionnaire /survey development

In order to achieve the objective of the study, quantitative research methodology has been adopted using Survey Method (Jackson, 2011) and preparing a questionnaire in a structured form to collect the data from the respondents. An initial questionnaire was prepared based on literature reviews, web resources and newspapers. Several iterative rounds of discussions amongst the authors and few students, in relevance to the proposed questions and objectives of the study, led to the

development of the final questionnaire (Appendix A in Supplementary materials). The first section collected general information related to the respondent's university, course/program and the place of residence from where they were accessing online classes. The second section included objective type questions to gather their perspective on the effectiveness of online learning, wherein they had to rate the convenience, structure of course content, course delivery and the communication between both parties on a Likert scale of 1 to 5 (low to high). Out of 21 questions, there were 6 multiple choice questions, 03 questions based on opinion scale, 8 likert scale questions and 4 true/false questions. While framing questions, major focus was given on student's adaptability for online mode of teaching in Theory Papers, Practicals, Extra-curricular Activities etc. The survey also aimed at soliciting essential attributes such as the time and discipline required for the online curriculum, satisfaction with the virtual mode of assessment, support during laboratory/practical based courses and extra-curricular activities. Additionally, a couple of open-ended questions where the students had to (1) give reasons if dissatisfied with the virtual mode of assessment and (2) specify which course taught online was easy, were also included in the questionnaire. Responses to open-ended questions were analyzed qualitatively by sorting through the information and extracting the relevant content. Lastly, the participants were asked to state preference out of online, F2F and hybrid modes of learning post COVID-19.

Distribution of survey and sample size
 The survey was conducted through Google Forms and the link was shared with the students of private as well as government educational institutions, majorly located in Delhi and National Capital Region (NCR). An attempt was made to target students pursuing diverse streams for instance humanities, sciences, engineering, education, etc. The target population consisted of undergraduates as well as postgraduates and a total of 249 responses were analyzed. The study employs a non-probability sampling technique as every survey was not picked up randomly. This convenience sampling technique (convenient to the researchers), resulted in snowball sampling as students further forwarded the link of Google form to their peers. This pilot-scale study was a cost-effective method for reaching students in multiple institutes/universities residing all over India in the shortest span of time.

Data Analysis

The proportion of respondents belonging to the undergraduate cadre was much higher than the postgraduates. Also, a higher number

of responses were elicited from government-funded organizations over private universities. Accordingly, for the parameters examining effective online learning, data were analyzed for each of these subgroups independently to detect any significant differences or associations between these dimensions. Microsoft Office Excel (2007) spreadsheet software has been used in organizing and plotting all data.

Analysis & Results

Respondent characteristics

Among the 249 responses received for the survey, 85percent of the surveys belonged to the undergraduate cadre with the remaining being postgraduates. Total of 69 percent of the total respondents were from government universities and the rest 31 percent were from the private universities (Table-1). The heterogeneous responses provide credibility to the survey process. The respondents were residents of different states of India i.e. 90 percent of them were from Delhi and neighboring states (59 percent in Delhi, 19 percent in UP and 13 percent Haryana) and only 9 percent of them located in other states of India.

Table-1: Number of respondents from each educational program from Government and private colleges

Program	Government Colleges	Private colleges
Undergraduate courses		
B.Com (H)	25	1
B.El.Ed	56	0
B.Sc.(H) Microbiology	19	0
B. A (H) Political Science	9	0

B.Tech	6	34
B.Voc	37	0
B. A. (Hons.) Applied Psychology	1	0
B. Des. Fashion Communication	0	1
Bachelor's of Business Administration	1	2
B.A (H) English	1	0
B.A (H) Economics	1	0
B.Sc (H) Physics	1	0
Fashion and lifestyle business management	0	8
B.A (H) Social Sciences & Humanities	1	0
B.A program	1	0
MBBS	0	1
B.A (H) History	1	0
Bachelors in Media and communication	0	1
Japanese (H)	1	0
B.Sc. Home science	1	0
Postgraduate courses		
M.Sc. Microbiology	1	7
M.Tech	2	0
MBA	0	9
PGDM	0	4
Masters in planning	3	1
Masters in urban management	0	6
M.Sc in Management of built environment	0	1
Masters in sustainable development	1	0
MA Psychology	1	0
M.Ed	1	0
Masters in Early Childhood Care & Education	1	0
*Master in Economics, Data Analytics and	0	1
Corporate Finance	0	1
Total	172	77
Grand total	249	

*Being pursued at École Polytechnique, France

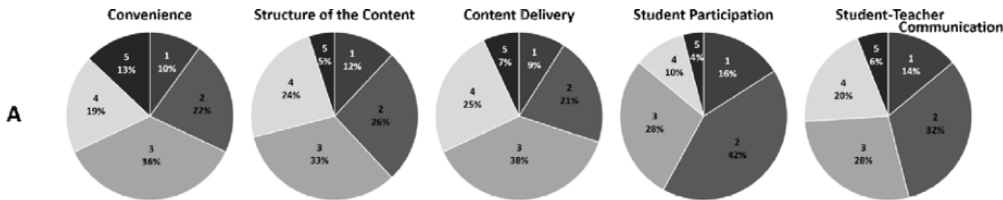
(The universities where these respondents are enrolled include - Colleges of Delhi University, IGNOU, JNU, Central university of Punjab, Guru Gobind Singh Indraprastha University, Indraprastha Institute of Information Technology, Indraprastha college for women, Jaypee Institute of Information Technology, Delhi Technological University, Symbiosis Centre for Management studies Pune, CEPT University Ahmedabad, Deenbandhu Chhotu Ram University of Science & Technology, Asian Business School, Bennett University, Amity University, Shiv Nadar University, School of Planning & Architecture Delhi, Politecnico di milano, Bharati Vidyapeeth college of Engineering Delhi, Kasturba Medical College of Manipal, Netaji Subhas University of Technology, Institute of Management Technology Ghaziabad and Pearl Academy Delhi)

Assessing students perception of the effectiveness of online learning

Fig.-1A depicts the students' opinion on convenience and quality of online learning by putting together their responses on a scale of 1-5 (with 1 scored as lowest and 5 scored as highest). Out of 249 surveys, only about 30 percent of the respondents rated convenience, the structure of the content and its delivery above 3. Similarly, barring 14 percent of respondents, the rest indicated student participation in online classes to be moderate (28 percent) or low (58percent). In terms of effective intercommunication between

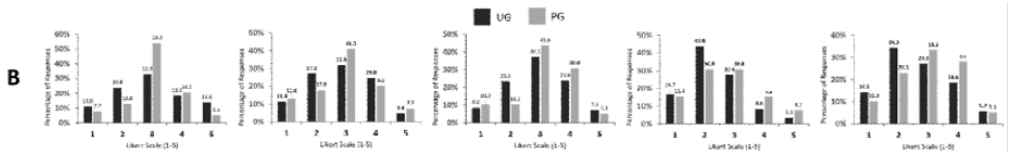
the students and the facilitators during online delivery, 26 percent of students were in favour of the classes being interactive. The analysis was also performed by segregating the responses into undergraduate (black bars in Fig.-1B) and postgraduate students (grey bars in Fig.-1B), indicating that the perception of the postgraduate students towards the effectiveness of online learning was slightly more positive as opposed to their juniors. This outcome could be accredited to the fact that this cadre of respondents is more focused and mature (Fig.-1B).

Fig. 2: Students’ perception of the effectiveness of online learning

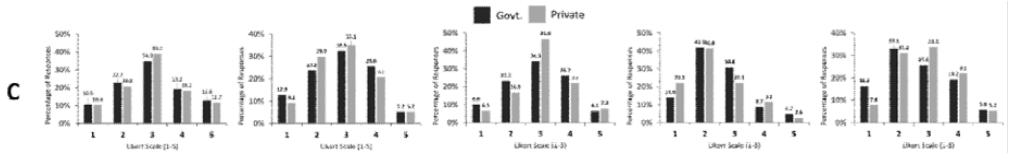


(A) Pie representation for percent responses obtained (on Likert scale of 1 to 5) for convenience, content structure and delivery, student participation

and student-teacher communication. Responses were analysed after segregating the undergraduate (UG) and postgraduate (PG) students



(B) and subsequently separating the participants from government HEIs and private universities



(C) The numerical value on top of each bar corresponds to an explicit percent response and is mentioned for better clarity

The researchers also tried to analyse the quality of online teaching-learning processes based on the type of HEIs. Black bars in Fig.-1C represent students' responses from government organizations whereas grey bars are responses from students enrolled in private institutes. There is no considerable difference in the effectiveness of an online mode of teaching as perceived by students. One reason could be that 90 percent of the respondents are from Delhi-NCR and are tech- savvy, having easy access to resources and network connectivity.

On comparing the online curriculum to the regular on-campus classes, it was inferred that the majority of students (76 percent) had to put in additional or similar time in absorbing the contents clearly. Also, 75 percent of students acknowledged the fact that it required more self-discipline to attend classes online. This falls in with the existing belief that in the absence of F2F interaction with teachers or classmates, successful outcome necessitates online

learners to be more self-disciplined.

Importance of class environment for learning

The sample students have been accustomed to the offline mode of campus learning throughout their lives and hence, not surprisingly, a unanimous consensus (97percent) reiterates the importance of a conventional class environment for learning (Highly important-72percent, Sometimes important-25 percent & Not that important-3 percent).

Problems in online learning as specified by the respondents

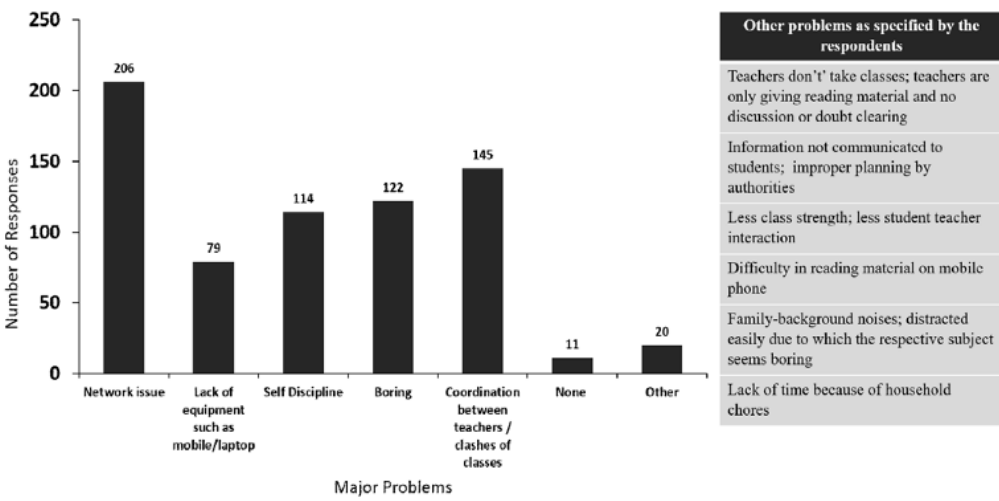
Anticipating the lack of experience and expertise in using online tools as barriers for the smooth conduct of online classes, the attitude of the surveys to adapt to computer-based technology was assessed by asking if they were open to expanding their skill sets. A positive finding of the study is that 91 percent of the respondents, representing Generation Z or Zoomers,

are comfortable in learning new skills and have no reticence to technology, However, it appears that most of them find online learning unsatisfactory and miss the classroom, teacher and peer interaction. The survey also asked which mode of learning is preferable post COVID-19, to which 46 percent of respondents voted for conventional classroom learning, 45percent pitched for blended mode (combining regular classroom with some online courses) while only 9percent opted for exclusive online education.

Fig.-2 is a compendium of responses stating the problems encountered by students during online classes. The respondents were provided the option to select multiple parameters from the common list of problems as apparent to the authors, for instance - network issue, lack of working equipment

such as mobile/laptop, self-discipline, interest and coordination between teachers. A choice was provided to state any additional issues faced by them. The top three obstacles turn out to be network issues (206 tics), coordination problems between teachers resulting in the clashes of classes (145 tics), and lack of interesting content (122 ticks). Other problems put across by the respondents (tabulated as an inset in Fig.-2) are related to the absence of teacher-student interaction (especially where only the content has been provided with no ensuing discussion), inadequate planning and communication by authorities, difficulty in reading on mobile phones, background distractions leading to the loss of concentration, and lack of time due to pending household chores.

Figure-2: Main problems faced by the surveys during online classes



In fact, some of these cataloged problems reinforce the earlier observation made by 58percent of students wherein online learning is reported as less participative and

interactive (Fig.-1A). Few respondents drew attention to some discipline-specific problems such as the need for practical exposure in life sciences, medical field, etc. To exclusively quote

one respondent, "Clinical knowledge can't be taught online. It requires a hospital setting with hand-on practice." These drawbacks have not been included in Fig-2 because hands-on experience / practical aspects of the curriculum in online mode have been discussed in a separate section. Only 11 respondents out of 249 (~4 percent) did not face any difficulty in online learning. If the quality of education is to remain uncompromised during the ongoing pandemic, some tangible solutions have to be worked out before the commencement of next semester. Understanding the obstacles faced by online learners is vital in formulating student-centric policies.

Assessment is an integral part of a curriculum. On asking the participants (as an open-ended question in the

survey), whether they are satisfied with the assessment conducted online, 50percent of the respondents responded affirmatively. For those who portrayed dissatisfaction, common key reasons are summarized in Table-2. Major apprehension is towards the online exam's inability to differentiate between a righteously submitted answer sheet over a dishonest one, causing disadvantage to students using ethical means. Additionally, the suitability of essay type questions for subjects related to humanities or solving of mathematical problems through online assessments has been raised. Technical glitches such as poor internet connectivity, unexpected power cuts, equipment failures and the crashing of assessment portals at the very end have made the process tougher.

Table-2: Summary of responses to - If not satisfied with the methods of assessment, kindly state the reason for the same

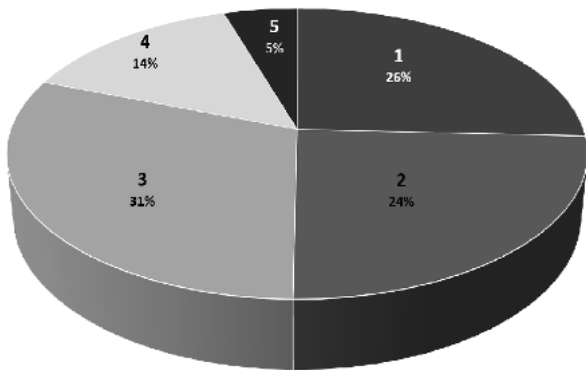
S. N.	Reasons for not being satisfied with the online mode of assessment
1	Cheating is easier in an online mcq based test
2	Timely submission of timed online exams cannot be guaranteed due to technical problems such as computer/mobile hardware issues at that crucial time, power blackout,
3	Student presentations given in a classroom setup have a lot of value as classmates ask questions and the presentation is a two way process but in the virtual mode we prepare a video of the presentation and send it to our respective teachers for their assessment. Also first preparing a presentation followed by video recording and then finally uploading is very time consuming (because of large sizes) and feels like a complete waste of time for 5 or 10 marks.
4	Assignments that require writing are copied and pasted
5	I am more comfortable in writing regular exams than these online exams because of
6	Maths mcq based online exam is either wrong or right but in the regular mode of examination where you have to show the steps for answer, even if concept or some steps are correct and answer is wrong due to silly mistakes, teachers give marks during

7	Students have explored different ways to cheat during viva also
8	No coordination between faculties of different disciplines to limit the number of assignments and quizzes, too many assignments all at the same time from various
9	Lacking practice to answer an exam online especially in humanities
10	The non-Delhi students are among the most disadvantaged. The outstation students are
11	Not able to express our answers with full of satisfaction

Towards the end, the survey delved into the coverage of the practical component and the justice done towards the extra-curricular activities that took place during online classes. 62percent of the respondents agreed that they were unable to pursue their favorite activities. The hands-on laboratory classes were replaced with virtual laboratories especially in the areas of life sciences and vocational subjects. Such labs are simulations of real experiments and do not require any infrastructure or equipment, enabling the learners to follow a particular procedure via a web browser at their own convenience. In India, the Ministry for Human

Resource Development launched vlabs portal (Vlabs, 2012), with an aim to provide technical education to those college students with inadequate lab-facilities. While teaching online during the COVID-19 era, theoretical briefing was accompanied by these simulated experiments wherever possible, however, most of the lab projects were replaced with review work on relevant topics. Only 19percent of the survey participants communicated satisfaction for the practical component indicating that hands-on activities are severely affected and need to be worked on for the effectiveness of the course content (Fig.-3).

Figure-3: Students response to the effectiveness of practicals conducted online on a scale of 1-5 (5 being the highest level of satisfaction)



Discussion

Meaningful Online education model in India

The unforeseen Corona pandemic forced every educational institute to shut down and pivot from "brick and mortar" classes to online classrooms to maintain continuity in learning as well as the cognitive and affective development of students. Conventional methods of education with projectors, smart boards, whiteboards, etc. were swiftly replaced with the digital communication tools and learning platforms. In fact, surprisingly in a country like India, where higher education has not yet embraced technological innovations, the initial shift from the formal classroom to online classroom did not pose too much of a problem, at least in the capital city. Barring the connectivity hiccups and infrastructure unavailability, both students and teachers managed to ease into the online format. But having reached this level is this the right way forward? The intent of the current study was to investigate if exposure to online learning has influenced the mindset of students in Delhi-NCR. The study assumed that in a metropolitan city, the internet fluctuations and technical knowhow may not be deterrents, and therefore, students may opt for this pedagogy of e-learning because of flexibility or convenience.

This survey, despite being small and restricted to a particular region, provides interesting insights. Although unanticipated, it is clear that the biggest hurdles encountered by respondents during the delivery of online classes have been internet connectivity and

mobile signal issues. Therefore, if this is the situation for the students residing in the capital city of India, then what can be said about net accessibility for those residing in the remote villages of the country. This is probably the reason for India's slow progress in embracing online education and technological advances. However, distance learning is the only logical option available for continuing education for millions in the uncertain pandemic situation we are in today. Authors feel that under the lockdown circumstances, when the paramount interest lies in keeping students safe, these concerns can be taken care of with an asynchronous teaching style (Algahtani, 2011), involving minimal internet usage for downloading and uploading purposes. Further, as per the latest report from the Ministry of Electronics & Information Technology (MeitY), the torchbearer of the Digital India Programme, there are ~2.9 lakh functional Common Service Centres (CSCs) with ICT infrastructure resources located at almost all Gram Panchayats across the country (MeitY, 2019; 2020). Students can make use of these facilities for downloading learning content and uploading assignments, probably free of cost or at a nominal cost.

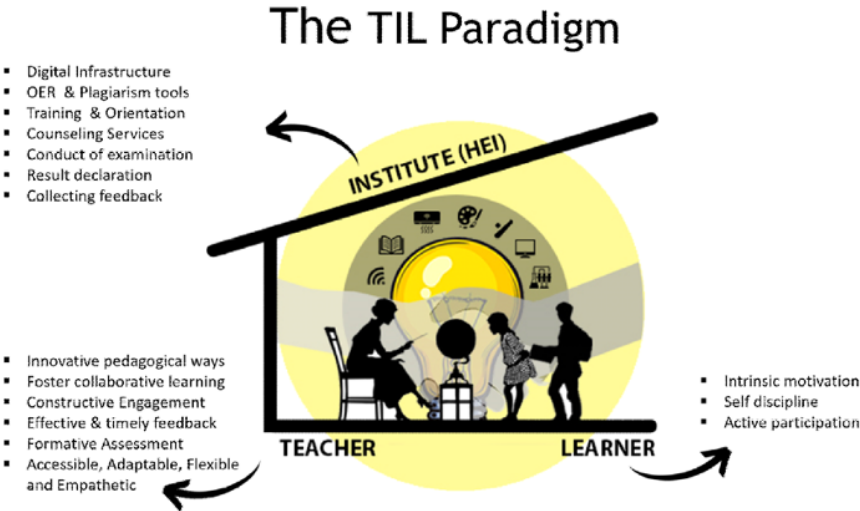
The survey reinforces some commonly held beliefs about virtual learning such as the need of more self-discipline, time and motivation, low level of class participation, communication gap with teachers (Fig.-2), lack of practical hands-on-training (Fig.-3) as well as extracurricular opportunities and additional factors such as unfair assessments (Table 1) and failing to take

care of socio-emotional needs. Indeed all these factors make a 100 percent transition from F2F to virtual format (post COVID-19) an unlikely eventuality which is not under deliberation at all. However, for ensuring the continuity, quality, and outreach of the university curriculum, when HEIs are forced to close down as a result of the COVID-19 pandemic, online education is the only option available to all stakeholders. No perfect roadmaps are available, but solutions can be extracted from our ancient education system, well-known for its holistic culture and nurturing students for their potential. Taking a cue from this, the Government of India has launched liberal National Educational Policy (NEP, 2020). The new

framework allows universities to offer online degrees, in addition to traditional and distance learning degrees. Recognizing the need and importance of strengthening and expanding access to online education, IIT Madras has launched the first online degree program in India (IITM, 2020).

This is the time to rethink our academic structures for effective e-learning and the authors envisage the collaboration between 3 stakeholders – Teacher, Institute of Higher Education, and the Learner. To reap the fruits of e-learning, all the contributors need to join hands and take ownership of their extended responsibilities (Fig.-4).

Figure-4: The TIL handshake for effective e-learning. Each collaborator’s characteristics and the explicit role is highlighted with bullet points



With this regard, the major challenges of online education appear to be the availability of infrastructure and other support mechanisms, the mindset of all stakeholders, and their affinity for digital technologies, motivation, and engagement of learners, use of

innovative pedagogies by teachers for better interactions, etc. The following sections discuss the role of each contributor in the delivery of effective online education.

Teacher (T)- As a facilitator, the teacher

plays an important role in the adoption, expansion and persuasion of online education. They need to identify and analyse the student's motivational aspect, include more interactive tools of online instruction and assessment, make screen sharing student friendly, monitor students' performance at regular intervals and communicate their inputs timely (Keller & Suzuki, 2004; Perrin, 2005). For this, it is important that teachers undergo proper training programs for online content delivery (Yengin et al., 2010; Judahil et al., 2007). In order to create a sense of engagement some humorous activity can be undertaken and collaborative learning can be established through projects and peer-supported activities. Here, it is emphasized that teachers should be accessible, adaptable, flexible and empathetic in their approach towards students. To evaluate academic achievements, formative assessment by teachers should be continuous throughout the course (Baleni, 2015; Hargreaves, 2005; Wiliam et al., 2004). The purpose of assessment must not be to label or rank but to identify areas of strengths and weaknesses. A range of tools such as assignments, quizzes, projects, presentations including peer assessment may be employed for this purpose. The criteria and rubrics for assessment must be pre-determined and shared with students.

Institution of Higher Education

(I)- A vital role needs to be played by HEIs so that proper implementation and acceptance of online education takes place throughout the country. It needs to ensure the availability of digital infrastructure and invest in

creating standardised online education platforms. The requirement of any software in the course should be taken care of by building it as a part of the learning management system. Both, the teacher and student need to be comfortable with the technology for the smooth execution of an online program, therefore mandatory training/orientation programs should be arranged to empower them with technical know-how. Institutional support should include help desk and counseling services to take care of grievances and issues related to technology and infrastructure access, hosting courseware and discussion forums, library facilities, virtual labs, conduct of online examinations, declaration of results, granting of certifications, etc. One of the important and critical features for effective online learning is assessment (Bransford et al., 2000) which should be reliable, credible and vigilant. Assessments should be automated and plagiarism software incorporated through various tools.

Learner (L)- Learner will provide the final stamp of approval on the successful dissemination of the online learning program. The concept of basic education and hence also of online learning is to focus on the needs of individual learners (Marc, 2002). In the online system of education, self-discipline and initiative are expected from the learner to fulfil personal learning goals (Wolfe, 2000; Draves, 1999). The greatest advantage of e-learning is the flexibility of time (Smedley, 2010; Hemsley, 2002), that is sought by the learner while pursuing a course. Also it provides the learner with the freedom of one's pace resulting in

increasing satisfaction and decreasing stress (Codone, 2001; Algahtani, 2011; Klein and Ware, 2003). E-learner can harvest these benefits only with proper infrastructure and right degree of technological knowhow, judicious time management, self-discipline, high intrinsic motivational level, overcoming a sense of isolation through discussion forums, chats, messages, and finally accepting the entire demand of the system with an open mindset.

Conclusion

It is anticipated that the number of students in a classroom post COVID-19, especially at the initial part of the reopening of the higher institutes, will be low due to the requirement of maintaining physical distance. So, emergency operated remote learning mode will dominate the education sector. Teachers will have to be prepared for teaching modules/sessions in both synchronous and asynchronous styles. Apart from live online lectures through zoom/google/skype and offline content delivery via videotaped classes, online education in India is being conducted through radio and television also. When electricity and network issues are major challenges for virtual learning, these are still the most powerful communication tools available to poor and underprivileged (Rajagopalan, 2020). Encouragingly, NEP 2020 launched on 29 July, 2020 by the Ministry of Human Resource

Development, Government of India, promotes online and digital education. It advocates use of online courses/modules, digital repositories, TV channels, etc. for expanding open and distance learning as well for increasing GER in higher education. Apart from the initiatives from the government, there is a need to fill the present gaps in the role of the three main stakeholders—teachers (T), institutions of higher education (I) and learners (L). The study envisages Institution support to both T and L for effective e-learning, which is only at an initial stage in India and has a very long way to go to touch the satisfaction level and to compete globally. The survey carried out reflects that irrespective of hurdles faced by the students, most of them see the hybrid model becoming the future trend. In fact, more targeted surveys will help in understanding different aspects of online education and the need and resources available to learners in our country. If, the proposed features of the three stakeholders can be asserted along with government's supporting policies, the authors believe that e-learning will play a pivotal role in shaping India's future

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