

ELT Pedagogical Platforms used by Engineering Students in Bangladesh: A Survey-Based Study of the Issues and Challenges during and beyond Covid-19 Pandemic

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ABSTRACT

The outbreak of the Covid-19 pandemic with its pervasive presence across the globe has justified the emergence of virtual teaching-learning platforms. Hence, the mode of teaching-learning paradigm has unprecedentedly transformed from the traditional classroom to an online one. Bangladeshi engineering institutions have also embraced this new-normal teaching methodology in English as Second/Foreign Language (ES/FL) contexts where innumerable obstacles like choosing appropriate online teaching methodology, contents, resources, assessment procedures, etc. have been encountered. Therefore, this research intends to identify the issues and challenges based on mental, material, skill, infrastructural, and assessment-related difficulties confronted by the undergraduate engineering students of a public university in Bangladesh. It also takes stock of the learners' attitudes towards learning English online. Quantitative data from 175 students through online questionnaires and qualitative data from 9 in-service teachers through online interviews have been obtained for this study. Then, the data were analyzed into descriptive statistics and frequencies using MS Excel and SPSS. The study's findings reveal that students and teachers encounter several difficulties in ensuing this new virtual pedagogic paradigm. Besides, the teachers remain in a great dilemma in assessing the students' English language proficiency, as there remains no single reliable online assessment scheme available. Finally, some technological tools are also proposed for the Bangladeshi pedagogic contexts that can help students feel motivated towards the virtual model of the language pedagogy.

Key Words: Covid-19, Online education, Virtual pedagogic platform, EFL, Engineering undergraduates

1. INTRODUCTION

The sudden outburst of novel coronavirus (Covid-19) in 2020 has unpredictably brought a severe transformation in the socio-economic, cultural, political, and educational lives of all human beings across the world. As it emerges with the international health concerns, the World Health Organization proclaimed Covid-19 as a global pandemic on 11 March, 2020 [1] conforming to the restrictions of social mobility as well as the closures of all educational institutions to ensure social distancing. Consequently, the unexpected terminations of the primary, secondary, and tertiary educational organizations as precautionary and preventive measure against Covid-19 pledge the commencement of online learning replacing the long traditional in-class standard education systems [2].

As a result, this new norm in educational contexts and the shaky transition from the celebrated classroom settings to the virtual systems caused both opportunities and challenges for the students, teachers, administrators, and stakeholders as well [3]. Hence, as there appears no predictable time frame for an end to the corona virus, the Bangladeshi government, like other foreign countries, issued directives to introduce online teaching platforms for

all the academic level students lest they are stressed and suffer loss of their academic session. Thus, the Bangladeshi

educational organizations planned to use the existing teaching materials and introduced the new forms of resources to suit the purpose and the needs of the students.

The selected engineering research site in a similar vein attempted to teach English to the engineering undergraduates using the newly established online mode. Social media platforms like Messenger, Facebook, WhatsApp, Telegram, etc. have been primarily marked as the effective tools to be used in virtual learning platforms to teach English [4]. In addition television channels have also been designated to teach various subject-specified contents to the secondary and higher secondary level learners [5]. Therefore, the innovation and incorporation of new teaching-learning strategies and approaches as well as the shift to the e-learning platform have become obvious choices during and beyond the covid-19 period to continue the education cycle [6].

Notwithstanding, though some measures are promptly initiated by the government and educational organizations to start this virtual method of learning, there prevails uncertainty about the effectiveness and efficacy of this

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digital learning tradition because the existing educational cultures are firmly rooted in the physical classroom settings. Similarly, certain challenges further appear in materializing the specified goals and objectives of the students using digital tools, especially in teaching the engineering students where lab experiment is of prime importance [7]. This kind of similar prospect is found in the selected engineering setting in teaching English as EFL where it impedes the direct intervention with the students in making them interactive and communicatively competent in nature. Nonetheless, it has been observed by various in-service teachers and students that some other socio-economic, cultural, infrastructural, and administrative issues affect the rate and route of virtual English language learning in comparison with offline learning.

In light of the above, this research article attempts to introspect into the issues and challenges prevailed and faced in teaching English virtually to the engineering students during this pandemic crisis. Similarly, it looks into the impediments found in online assessment procedures to measure the students' English language proficiency. Lastly, it further recommends some technological tools that can ensure the language learning and learners stress-free, motivating, as well as effective.

2. RELATED LITERATURE AND CONCEPTUAL THEORY

Covid-19 indisputably puts forward a challenge to the socio-cultural and educational lives of the students and teachers in being adjusted to the new norm of e-learning systems. Though it has been outlined that online teaching or distance education (DE) has profoundly benefitted the students to access the updated learning materials and to be competent in using their creative faculty, this abrupt adoption of virtual teaching is of entirely different nature as this is termed as crisis learning [8]. Therefore, to let the students continue their studies and overcome sudden psychological stress and paranoia, virtual learning can have a persistent impact. As it is initiated with the demand of time and situation, the students and teachers face different level challenges in ensuing virtual learning. Most importantly, the students from the marginalized rural socio-economic background face dilemma in participating in online classes as it is not easy to afford android devices. Besides, there are those who are not well-versed in handling smart phones mobile phones and there are those who cannot afford do pay internet bills [9]. Literature survey reveals that virtual learning is difficult to be implemented effectively because of social and cultural backgrounds, infrastructural and administrative constraints, inadequate training of students and teachers in handling online classes, inaccessibility to smartphones, large classrooms, limited time, and lastly absence of pedagogy of the course that need lab experiments [10]. Moreover, inadequate access and availability of internet

connection and the insufficiency of the latest technology also hinder students' learning process. A study explored that off-line virtual learning becomes ineffective not for technological inadequacy and incompetence, rather for the lack of students' positive learning attitudes, self-discipline, and lastly for their weak determination designed for online teaching [6]. According to another study, sometimes adopting and adapting new technological tools and resources in online teaching barely help students in fulfilling their goals as the students could not be at ease with those new systems [2]. However, the application of digital technologies for the exploration, improvement, and evaluation of educational packages cannot be ingested in a bombastic manner as both the students and the teachers have not yet been satisfactorily adapted to the digital literacy, Virtual Management Systems (VMS), and online teaching tools [11]. Therefore, the stakeholders need to incorporate teleconferencing facilities and use common social media platforms like Skype, Facebook messenger, Google meets, etc. to make the learners ease as well as learning process accessible to all [12]. Similarly, the restructuring of online education requires certain measures like maintaining multi-faced communications with the students, parents, and staffs, ensuring adequate learning materials and, finally accessing online data and resources through social media tools, Google apps, and cloud computing for recovering learning data[13].

Though the commencement of online learning and teaching poses various realities and challenges, it also creates prospects both for the teachers and students during the COVID-19 pandemic.

In totality, the online mode of teaching is different from physical teaching in terms of educational approaches and methods, philosophy, and theories. Hence, it advocates the concept of humanism, reconstructionism, and connectivism that help the students to be holistic in nature, to use and recreate existing schematic knowledge, and to be connected with the modern globalized world using their reasoning capabilities. Online teaching can make the learners to be adept in using technologies, gaining lifelong learning, and being connected with the digital tools that ensure worldwide communication staying at any corner of the world [14]. Thus, the online mode can make the learners self-directed and connectivist in nature that ultimately lead them to accomplish their learning needs to be fitted in this technology-based world.

Online teaching creates a sense of humanism, connectivism, self-regulation, and self-access among the students, sometimes they face difficulties in accessing the online mode of teaching platform. Van Dijk [15] therefore constructed four types of access difficulty that hinder students' online progress. They are termed as mental access, material access, skill access, and usage access.

Table I: Van Dijk’s access criteria based on digital divide research (2002)

Term	Criteria
Mental access	Lack of fundamental digital experience because of want of interest, Computer anxiety and unsophisticated nature of digital tools
Material access	No computers or Digital devices; No proper internet connection
Skill access	Lack of digital skills because of Fewer user-friendliness attitudes; Infrastructural support; Educational and Social support
Usage access	Lack of proper distribution of resources

In a similar vein, the study by Bernard et al.’s [16] through questionnaires for the online inventory measures virtual learning in terms of

- a) readiness for online skills
- b) readiness for self-management
- c) readiness for beliefs about virtual learning and
- d) readiness for interaction with the teachers and other students

Therefore, the present research is conducted taking into account the theory of Van Dijk’s online access interference and Bernard’s questionnaire for online learning. Hence, it focuses on the technical hitches based on Van Dijk and Bernard’s four types of difficulties mentioned above.

Moreover, though the existing literature initiated a lot of challenges regarding the enactment of online learning in different educational contexts, there is a relative dearth of literature in Bangladesh on the issues and challenges found in teaching English as EFL and assessing the engineering learners’ language proficiency using the online platform. As a result, this research is carried out to explore the issues and challenges that prevailed in teaching English online in an engineering context. It also looks into the issues found in online assessment procedures. Finally, it advocates the necessary online technological tools that can adhere to the learning processes.

2.1 Research questions

This study foregrounds the following research questions to be focused on:

- a) What kinds of challenges are faced by the Engineering students in learning English virtually?
- b) How do the students adapt themselves with new platform/s of learning?
- c) How is the reliability of the online assessment ensured?

3. RESEARCH DESIGN

This segment of this research deals with how the study is conducted taking into consideration the population, sample, research method, and data collection and analysis procedures.

3.1 Population and sample

Engineering students of Bangladesh are selected as the population for this study. The sample of the article included 175 undergraduate engineering students studying at a public university in Bangladesh. Though 190 students were selected as a sample, finally 175 students responded. They are randomly selected from five engineering departments. Of them, 43 were from Mechanical engineering, 30 from Civil engineering, 35 from Electrical and Electronic Engineering, 37 from Computer Science and engineering, and finally 30 from Architecture department. Among them, 146 students were male and 29 were female.

In addition to this, 9 in-service teachers who conducted online English classes were also selected for an online interview.

3.2 Research Instruments for Data Collection

The study used a mix-method research design. It includes an online students’ survey questionnaire based on Van Dijk’s and Bernard’s theory and teachers’ semi-structured interviews as a research instrument for data collection. For this, Google form is used as an online tool to collect the students’ responses. The interview data are acquired through online mode from the teachers and recording of their voice clips are documented. Therefore, the research comprises quantitative questionnaire as well as qualitative interview data to assess the learners’ and teachers’ world-view on the issues and challenges faced by them during the English language pedagogy during the COVID-19 pandemic at an engineering university of Bangladesh.

To do so, the survey questionnaire was prepared based on four segments namely the challenges faced in mental access, skill access, material access, and finally infrastructural access. Each segment comprises 3 to 4 sub-themes of challenges faced by the students.

3.3 Data Analysis Techniques

To secure valid and reliable data, first of all, learners’ questionnaire responses and the audio clip of the teachers’ interview are collected altogether. Then, the students’ questionnaire is analysed using MS Excel and SPSS software to show the relative frequencies and percentages. Moreover, the Likert scale is used to export the variation of the students’ perceptions. Similarly, to analyse interview data, firstly, the audio clip is heard and then transcribed into texts.

4. FINDINGS AND DISCUSSION

This section imperceptibly sketches the findings and discussions of the research study.

Question 1: How much effective is the online pedagogy to you in learning English as EFL?

Firstly, the students were asked to give their consent on the commencement of online education by the university authority and their prospect especially in learning English online. The finding poses that the students' caveat regarding online English teaching and learning was not agreeable. In figure 2, 75% students (n=131) posit that they disagreed with the efficacy of online instruction in learning English as it lacks direct interaction which is the essence of the 'communicative competence' approach. 16% learners agreed that it is effective to them. Likewise, 8 teachers also gave consent in line with the students' statement that it could barely improve the students' English language proficiency as one of the teachers asserted "as we teach English as EFL in Bangladesh, many students still have paranoia on English language learning. When teaching English is conducted online, the weak students feel shy and distracted and cannot ask their problems to teachers instantly. Thus, their issues in language difficulties remain unsolved that encumber their linguistic proficiency. This is not present in the physical classroom" (response 1).

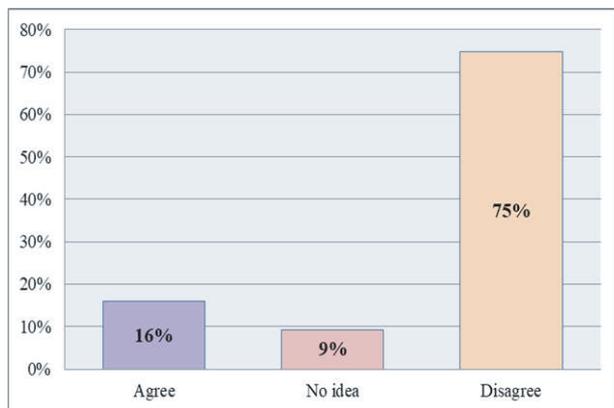


Fig. 1: Students' perception on whether the online teaching is effective enough or not in learning English

Question 2: How much is the online instruction helpful to improve the English Language LSRW proficiency?

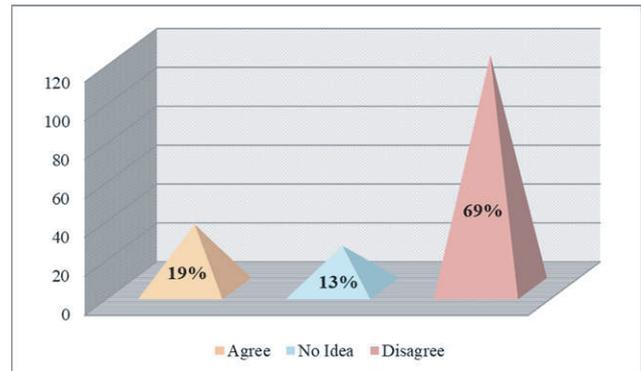


Fig. 2: Students' perception on how much the online instruction helps in improving the English language LSRW proficiency

Figure 2 postulates the students' insight on whether online teaching can help them in developing their Listening, Speaking, Reading, and Writing (LSRW) skills or not. The majority of the students (69%) disagreed with that statement though 19% opined positively and 13% gave no consent on it. The reason is revealed by some of the teachers interviewed that in online learning, students remain in a unprepared state. They still could not be adapted to this learning system. Besides, different technological tools are used by different teachers leading to create confusion among them. Further, the majorities of the students are from the mediocre socio-economic background lacking proper Virtual Management Systems (VMS) and could not utilize the online resources. Some teachers also face difficulty in managing online tools that also obstruct the evenness of teaching. In physical listening and speaking classes, students remain rigorous about their performance in the debate, role-playing, discussions, presentations that are absent in online learning. In addition, another teacher shared during interview that, "Immediate feedback is delayed in online teaching. Therefore, the want of both written and verbal feedback in teaching the LSRW skills make them fossilized and continue with their errors" (response 2).

Question 3: In your opinion, what are the prerequisite affordances for an online pedagogy?

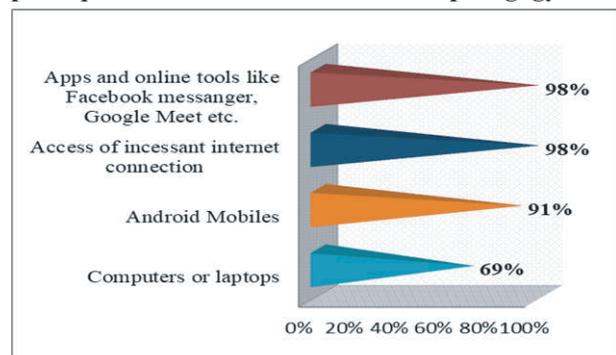


Fig. 3: Students' preferences on the prerequisite affordances for online teaching

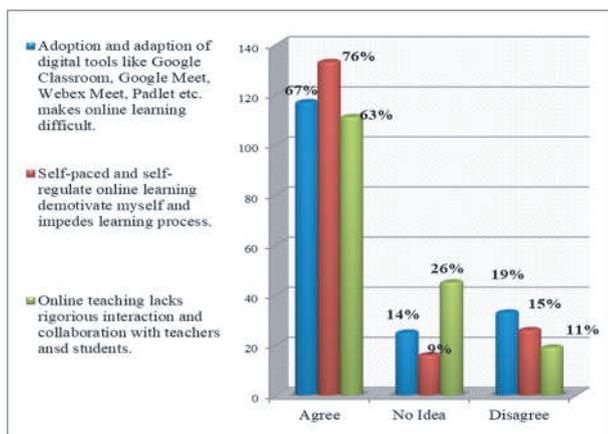


Fig. 6: Challenges faced in skill and self-management process

Besides, 19% students (n=33) think that adapting with digital tools does not interfere with their learning route and paces. Similarly, 76% learners (n=133) encounter problems in taking their own learning responsibility and self-managing their schedules for online classes, doing assessments, completing quizzes, etc. Again, 63% students agreed that English online classes lack active interaction than physical classes which ultimately obstacle their development in speaking proficiency.

Teachers' interview result exposes that most of the learners complain that they could not keep pace with the online mode of instruction as it is highly self-regulated, lack spontaneous collaboration and adequate digital skills. Most of them opined that at the very beginning of the online instruction, students became demotivated in learning English because it is mostly self-paced in nature where students' perseverance and accountabilities are of the utmost necessity. In spite of this, now they are taking it as normal and trying to be adjusted to the new norms.

Question 7: How do the infrastructural and assessment processes affect the online ELT pedagogy?

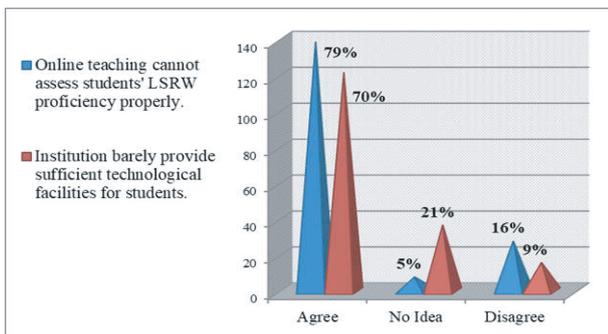


Fig. 7: Challenges faced in infrastructural and assessment process

In figure 7, students opined about the assessment processes conducted in online learning. Earlier, students' language proficiency was measured mostly by the summative form assessments. Nonetheless, this new learning system introduced formative assessments like continuous assignments, quizzes, solving puzzles, reports, and proposals instead of long narrative questions. Hence, this creates difficulty and discomfort among the learners to be adjusted within a couple of months. This is evident as 79% learners (n=139) felt that their LSRW proficiency is not measured properly by this new learning system. Previously, teachers opined that they took presentations, mock viva, debate sessions, role-playing sessions, etc. for speaking practices. All these are now impossible to carry on online given the large number of students in each group. As a result, their speaking skill is not measured and assessed properly. One of the teachers expressed, "Sometimes we tried to conduct online mock viva and presentations for developing students' speaking fluency, but it happens that internet facility has gone or the students giving presentations from a remote rural area that has poor internet signal" (response 4). All these impede the assessment of learners' speaking skill. Similar case is found in listening skill. Another teacher outlined, "As listening was practiced and assessed in English lab classrooms, they could learn staying in classrooms. But now, conducting lab classes has yet not been started and for this their listening skill is measured for the namesake just giving them some audio clips and asking to submit reports that lack the validity of assessment criteria"(response 5). Four teachers opined, "We are still not given any proper online rubrics for measuring their LSRW skills. Sometimes, different teachers use their different level strategies to assess the students' language skills. Consequently, universality is destroyed in assessment procedures"(response 6). Further, 70% engineering learners responded that they lack infrastructural supports like providing technical and financial supports, e-resources, and socio-psychological counseling that work as great barriers for them in ensuing online education, though 21% stated that they had no idea about this and 9% disagreed this statement.

Question 8: In your opinion, what are the most pertinent barriers that affect the online ELT pedagogy?

Finally, students were given options to show their opinions on the issues that mostly hinder virtual learning systems. 90% learners (n=163) exposed that they lack digital smartphones that impede their learning system. Similarly, 87% (n=152) students responded that online English language learning systems are not conducive to develop their proficiency.

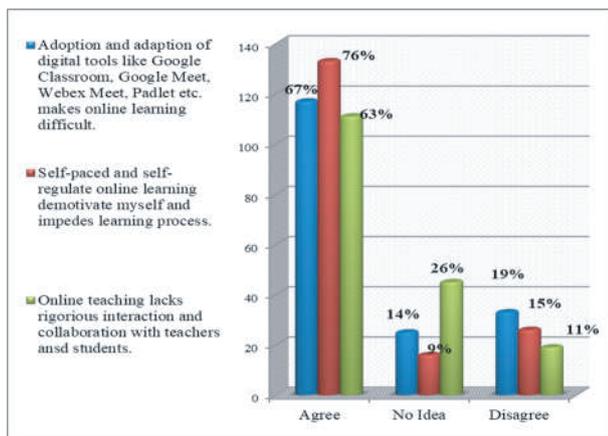


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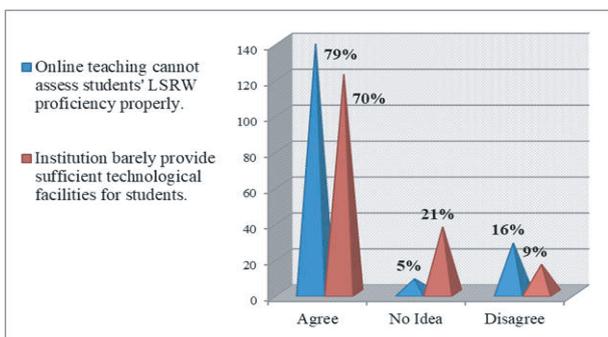


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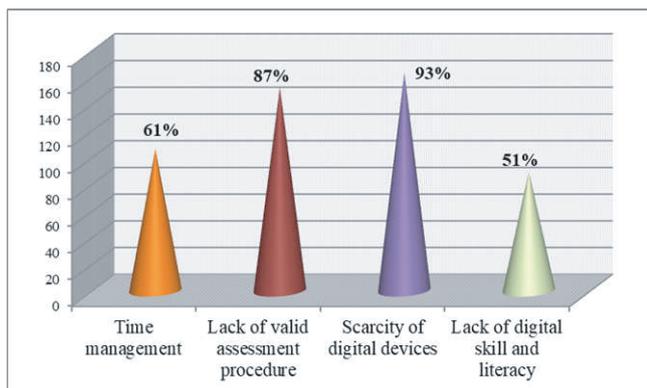


Fig. 8: Students opinion on the problems they think mostly hinder online teaching-learning process

Accordingly, 61% students (n=106) suggest that the time management system is also a great challenge. 51% (n=89) learners conjecture that deficiency in digital literacy and skill is responsible for their poor performance in online assessment systems. Most of the teachers think that all these issues more or less affect online language learning progressions.

4.1 Overall Findings

The findings from the students' questionnaire and teachers' interview reveal that four types of difficulties namely the mental, material, skill, and assessment issues outlined by Van Dijk and Bernard in online education are largely confronted by the majority of engineering students in learning English.

The results of the study in this research indicate that their language learning processes, outcomes, and proficiency are not up to the mark as almost all of the students have doubt and anxiety towards controlling and managing digital tools, providing uninterrupted internet access, digital devices, and finally regulating their own learning strategies and processes. Besides, they could not still wholeheartedly embrace this mode of new learning systems, especially in learning English, as they repeatedly yearn for the start of physical education where collaboration and interaction guide the learning cycles and processes. The students' survey also indicates that their LSRW skills are not duly developed through this mode of learning schemes.

Likewise, teachers too faced challenges in maintaining time as sometimes it happened that half of the class time was covered in letting the students join classes and ensure taking students' attendance. Therefore, it became difficult for teachers to focus on the contents to be taught. Moreover, maximum teachers and students faced internet breakdown and poor networking that hindered the rate and route of the learning systems. Notwithstanding, lack of digital literacy and skills in using technological tools had also been explored both

by the teachers and students as an impediment to learning English. Some teachers shared that they had to struggle a lot at the very beginning in sequencing and organizing the online materials and resources for teaching LSRW skills. One teacher utterly briefed that

“I had to stick to my laptop whole day to prepare class materials, test questions, quizzes, and assignments for my students keeping in mind their interest and needs. It was a huge physical and mental pressure for me to cope with these new norms” (response 7).

The most challenging part indicated by the teachers was the assessment procedures. The interview results display that the assessments of the students' progress are done by collecting assignments, proposals, and reports online. Almost all of the teachers put forward that as the evaluation system is open book exam, it was found that the students sometimes copy from online resources without understanding the questions. Besides, the students fail to submit their assignments on time. Therefore, teachers had to face ethical issues in allowing and accepting late tasks. Significant number of teachers reported having received answer scripts and assignments drafted by a tutor for a student. Two teachers said that assessing speaking and listening skills are not justified by the online mode as they lack the content and the criterion validity. Thus, the result of the study, to some extent, aligns with the research done by Ahmady, Shahbazi and Heidari [10].

Though online pedagogy has enumerated a number of challenges for teachers and students, there are some prospects worth being optimistic about, as well. They are:

- Scope of using a variety of online sources
- Multiple materials
- Innumerable online tools and technologies
- Usage of creativity and reasoning capabilities as plagiarism checker is used by the teachers to evaluate assignments

To conclude, the teachers shared that the learners went through acute psychological paranoia at the very beginning of the COVID-19 pandemic because of sudden impact on human beings across the globe. But, with the passage of time, both teachers and students are taking it as normal and trying to be adjusted to the online mode of education.

4.2 Online Technological Tools effective for Teaching English in Bangladeshi Classrooms

The online tools that are mostly used in the pedagogic context in Bangladesh are Zoom, Google Meet, Google

Classroom, and Facebook Messenger.. In addition to this, some other tools, and resources that can be useful for the English language learners are as follows:

Skill	Useful Tools or Resources
Other Online Platforms	Webx Meet, Telegram, Padlet, Nearpod, Microsoft Teams, Adobe Connect, Schoology, Edmodo, Quipper School, UDEMY, Wiziq, Kahoot, Linguee, Quizzi, etc.
Speaking	YouGlish, Merriam-Webster, Google Translate, FORVO, Voice of American Pronunciation Guide, The Color Vowel Chart, Dialogues for Everyday Use, Learning American English, Skype, etc.
Listening	ESL lab, ESL Lounge ,manythings.com, VOA, American English: Sing Out Loud, Ted Talks, TedX,
Reading and Vocabulary	Lingro, COCA, Class Dojo, Duo lingo, etc.
Writing	Google Docs, My Writing Lab, MS Word, Grammarly, Criterion, Turnitin, etc.

The engineering students thus can use these resources to practice and develop their language skills.

5. CONCLUSION

The survey study explored the issues and challenges faced in learning English as EFL by undergraduate engineering students in Bangladesh. For this, the theory of Van Dijk's online access difficulty, connectivism, humanism, and Bernard's online survey method are taken as theoretical underpinnings. It reveals the four-level difficulties the students face while being a part of the online learning process. All the problems, in terms of mental, material, skill, and assessment structures are more or less found prominent in the virtual learning methods. Teachers also face challenges in choosing and organizing authentic materials; culturally sensitive online resources for teaching the LSRW skills. Though there prevail innumerable challenges, the positive feature is that the university authority and the Government are trying hard to afford the technological supports to the teachers and students as well. Finally, though it is taken as crisis-learning, the stakeholders are getting habituated to this new-normal mode of formal instruction and hopefully, the whole pedagogical platform will go through a massive change in the near future. To extend this study further, a question needs to answer in the future research whether this new normal is forcing a new divide between the upper and lower class especially in the third world country.

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