

University EFL Teachers' Perceptions About the Effectiveness of AI-Enhanced E-Assessments in Bangladesh: A Phenomenological Study

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Abstract:

Objectives: This study aimed to determine the perceptions of EFL teachers' challenges. In addition, this study investigated potential solutions to mitigate the challenges experienced by EFL teachers.

Methods: This research took a qualitative design and, through a purposive sampling method, selected a total of six EFL teachers from three different private universities at a tertiary level. This study collected data through an in-depth interview. Interviews were then coded and analyzed based on thematic analysis in order to identify repeated patterns and insights for a comprehensive exploration of experiences and perspectives among participants.

Findings: Most of the EFL teachers in Bangladesh do not consider AI-enhanced e-assessment an effective tool to assess students, and they are skeptical about its efficiency. They prefer pen-and-paper assessment to e-assessment. Infrastructural issues, lack of IT knowledge, lack of training in AI enhanced e-assessment, being unable to prevent e-cheating, plagiarism, and health hazards were some of the major challenges while conducting AI-enhanced e-assessment.

Research implications: The study strongly underlines the demand for infrastructure development, rigorous training in using artificial intelligence tools, and effective policy measures to offset e-cheating and plagiarism.

Keywords: E-assessment; e-cheating; plagiarism; EFL; Artificial Intelligence; AI-enhanced E-assessment; University; Bangladesh.

1 Introduction

The education system, English language, and learner motivation in every region of the world keep evolving (Hasan & Labonya, 2016a, 2016b; Hossain et al., 2015; Rahman et al., 2018). Along with teaching and learning techniques, assessment methods too have started digitalizing (Ahmad & Ali, 2019; Abdullaeva et al., 2024; Farrah & Jabari, 2020; Jomaa & Jibroo, 2024; Wahas & Syed, 2024). Nowadays, e-assessments, especially AI-enhanced assessments, are in wide use by teachers as educational institutes have started shifting to more technology-driven approaches. Many studies have proved that though teachers have welcomed this adjustment, they also encounter multiple challenges while assessing their students online. According to the research conducted by Chung and Choi (2021), although generally instructors are satisfied with this new assessment method, they find it quite challenging and time-consuming, as well as tiring because constant observation of students is required, and their timely feedback for their improvement is also required.

The target of the research are the EFL teachers teaching the basic English language courses, majorly ENG101, ENG102, ENG103, and ENG105. ENG101: Composition course, which essentially covers the basic skills of writing. The two major focuses of this class are grammar and composition to aid students in building skills. ENG102: The major focus in this class is composition skills, through which students learn to write a well-organized essay. This class continues the class ENG101 to further these skills in basic English prose writing. ENG103: Students learn to write at an academic level and to read with more comprehension. ENG105: The student is introduced to the main concepts of linguistics. Meccawy, Meccawy, and Alsobhi (2021) stated that although most of the teachers were satisfied with the auto-correction feature of the AI-enhanced assessment, they surmised that AI-enhanced assessments may not be fitting for some practical subjects.

Researchers (Ahmad & Ali, 2019; Abdullaeva et al., 2024; Farrah & Jabari, 2020; Jomaa & Jibroo, 2024; Wahas & Syed, 2024) further found that most faculty members preferred traditional on-campus assessment methods over AI-enhanced assessments. Islam (2021) also depicted that, due to a lack of proper training and experience related to the new system in rural areas of Bangladesh, teachers were inclined to develop an adverse attitude towards e-assessment. So, they face

difficulties adjusting to e-teaching and e-assessment and facing problems in ensuring a reliable assessment method. There were several measures that were taken, but Sa'di et al. (2021) indicated that a lot of faculty members did not believe in the efficiency of e-assessment due to the significant issues concerning e-cheating, plagiarism, and academic dishonesty.

One of the current trends in the educational sector has been the adoption of e-assessment, especially AI-enhanced assessments. However, there is still skepticism about its efficiency concerning the assessment of the English proficiency level of tertiary students. Teachers are increasingly getting used to this assessment practice. They reflect ambiguous views about the efficiency of this assessment tool. Some cordially welcome the changes, whereas others discuss some drawbacks concerning e-assessment. In assessing students in online modes, many queries come up regarding its efficiency in basic English language courses. Therefore, a study regarding the perception of EFL teachers about the efficiency of e-assessments at the tertiary level within the Bangladeshi context has to be undertaken. The challenges faced by both teachers and students in Bangladesh need to be identified, along with the suitability of e-assessments for measuring students at this level. The research questions of this study are,

- What perceptions do the EFL teachers' have regarding the efficiency of AI-enhanced e-assessments of English courses?
- What are the challenges EFL teachers face conducting AI-enhanced e-assessments of English courses?
- How can the EFL teachers overcome the quality of e-assessment of English courses?

2 Literature Review

Assessment involves a few specific activities, such as testing, performances, project ratings, and observations (Orlich, Harder, Callahan & Gibson, 2004). Hersh (2004) explained that assessment is an important part of teaching, learning, and feedback-giving processes that helps to increase institutional development. Mislevy et al. (2003) stated that an assessment is an instrument or an apparatus to measure students' accomplishments or attained skills based on some particular things they say, do, or make in specific surroundings. According to Dietal et al. (1991), assessment evaluates the students' performance with accuracy to help the

teachers, administrators, and important decision-makers make effective decisions. However, Kellough and Kellough (1999) found seven objectives of assessment: 1. Enhance student learning; 2. Find out students' potential and where they are lacking; 3. scrutinize and improve the effectiveness of different teaching strategies; 4. scrutinize and improve the effectiveness of curricular programs; 5. advance teaching effectiveness; 6. provide necessary administrative data to facilitate decision-making and to communicate with stakeholders.

E-assessment is the application of digital technologies—which also include enhanced AI e-assessments—for preparing, scrutinizing, distributing, assessing, and giving feedback on all major types of assessments, such as formative, summative, diagnostic, or self-assessment. Advantages of e-assessment for students, educators, and schools abound. For example, it has the power to assess some important life skills, improve scoring reliability, and enhance the quality of the test itself. AI-enhanced e-assessments could also do the job of response analysis of students better and give personalized feedback to them, thereby overcoming the difficulties or drawbacks concerning traditional paper-based assessment systems. Indeed, e-assessment has brought greater measurement of learner outcomes, making immediate and direct feedback possible. Gilbert et al. (2011). These developments have ensured that assessments are much quicker and more accurate, allowing savings of time with increased degrees of precision compared to traditional pen-and-paper methods (Hillier, 2014; Stodberg, 2012; & De Villiers et al., 2016).

From the previous research, it is quite clear that, besides the positive aspects, many challenges are also faced while implementing e-assessments at the tertiary level. (Alruwais et al. 2018) stated that there are different studies that have been investigated on these challenges: (1) Students are not properly trained with computers and are also not familiar with the e-assessment system (Way, 2012; Donovan et al., 2007). Korkmaz and Toraman (2020) discovered that educators of various levels in Turkey faced difficulties during e-teaching as well as e-assessments due to a lack of proper knowledge and training. Korkmaz and Toraman (2020) mentioned that the educators found it difficult to make reliable e-assessments due to a lack of knowledge about e-assessment. (2) Teachers and students both face accessibility problems with computers and the internet (Crews & Curtis, 2011; Way, 2012). (3) Poor countries, such as Nigeria, face

difficulties while implementing e-assessments due to the poor infrastructure in their country (Way, 2012). There have been many studies (Abduh, 2021; Meccawy et al., 2021; Anasse and Rhandy, 2021; Mirza, 2021; Farhat et al., 2021; Fitriyah and Jannah, 2021; Aldhalemi et al., 2021; Thambusamy & Singh, 2021; Sa'di et al., 2021) conducted in the past about e-assessment from teachers' point of view. Especially during this pandemic situation, online education as well as e-assessment have become hot topics for researchers in the education sector. This study only focuses on the teacher's view regarding the efficiency of e-assessment. From past studies, it has been found that there has always been a debate regarding the efficiency of e-assessments. Many teachers are against this new assessment system. They prefer the traditional face-to-face classes and exams. While some other teachers have embraced this new change and prefer online teaching and e-assessments because they think this new system has helped them to develop themselves and gain many new digital skills.

Based on Social Cognitive Theory developed by Bandura (1986), this study investigates the perceptions of university EFL teachers of e-assessment in order to identify the challenges, their reasons, and mitigation strategies. The essence of the theory is that personal, environmental, and behavioral factors continually influence one another; in this regard, the individual learns by observing others as well as the consequences of their actions. Therefore, interpretation within the theoretical framework implies that teachers' perceptions and ideal behaviors in e-assessment are determined not only by personal factors but are also influenced by the behavior and expectations of others, as well as the intervention of the social environment, manifested in the technological infrastructure. Through the theoretical framework, the study focuses on the ways that individual experiences and beliefs are reinforced or opposed by environmental and technological insights to determine the best practices in addressing challenges and perceptions of e-assessment's effectiveness.

3 Method

A qualitative methodology was adopted to explore the perceptions of the teachers regarding the efficiency of e-assessments of English courses. There are many reasons behind our selection of a qualitative design for this study. The design is open-ended, which allows a more comprehensive and thorough investigation of the respondents'

opinions, knowledge, and perceptions (Kitzinger, 1995; Lune & Berg, 2017). In addition, due to their flexible and open-ended nature, qualitative methods help in the formation of a great variety of ideas and opinions that individuals have about the targeted issues and, at the same time, proclaim the difference of opinions among groups (Lune & Berg, 2017). Furthermore, qualitative methods endeavor to fill in gaps for those research areas that survey-based research left undisclosed or failed to investigate due to some limitations (Dolan Mullen & Reynolds, 1978; Uddin et al., 2020). Therefore, compared to other models, qualitative interviews were a great choice for this study to form concepts and hypotheses that have far more possibilities for research (Entwistle et al., 1998). Samples were chosen using the purposive sampling technique. Sample members were EFL teachers who teach at the tertiary level at four different private universities in urban areas. Only one participant was from a semi-urban area. All the teachers teach at the undergraduate level, and three teachers among them teach at the graduate level too.

Based on an in-depth literature review (Alatrash, 2021; Thambusamy and Singh, 2021; Sa'di et al., 2021; Abduh, 2021; Mirza, 2021; Islam, 2021; Meccawy et al., 2021; Anasse and Rhandy, 2021; Sultan, 2021; Chung and Choi, 2021; Farhat et al., 2021; Bashitialshaaer et al., 2021; Korkmaz and Toraman, 2020; Hasan et al., 2018; Hasan and Ibrahim, 2017; Astiandani, 2021; Masood, 2021; Alruwais et al., 2017) a semi structured interview guide was developed (Kvale, 1996). The researcher focused on the efficiency of e-assessments, teachers' perceptions towards e-assessments in Bangladesh, and the efficiency of e-assessments in public speaking courses. Before conducting the data collection process, the researcher has undergone validation and reliability assessments. Qualitative experts at a university validated the interview guide by using a combination of argumentative and cumulative techniques.

3.1 Data Collection

The instrument of this study is an in-depth interview, and this instrument has been chosen for this study because an in-depth interview helps the researchers to explore the perspectives of a small number of respondents on a particular topic, idea, notion, or situation. Participants were the university teachers who usually teach English literature and language both. They are all experts in teaching English skills. Their consent has been taken through email prior to their interviews. All

the participants were encouraged to fill up the question and also share their opinions unhesitatingly. A total of eight EFL teachers were interviewed. The interviews were verified for accuracy and consistency by reading their answers meticulously and were analyzed for the contents.

3.2 Data Analysis

Coding and analyzing the in-depth interviews are significant for research. The main purpose of the coding process is to get meaningful content out of text or audiotaped data, then divide it into text or image segments, label the segments with codes, scrutinize codes for overlap and redundancy, and collapse these codes into broad themes (Creswell, 2015; Uddin et al., 2020). Then a particular in-depth transcription was selected, and evolving ideas from the transcription were discerned. After that, common or related issues from the whole text were underlined or asserted within parentheses to be coded under the selected code or theme. The paragraphs or sentences were bracketed or underlined under the same theme throughout the whole text. Thus, all the important and related themes are coded from the whole transcription or text. After the completion of the coding process of an entire text, a list of all codes was arranged. Then those codes that were identical were put into a single category or a group. After that, all those unnecessary and additional codes were separated. Then the whole text or transcription was examined based on the list of codes. Then the important quotes from participants were put into inverted commas or circled, which may support any listed codes. Then the codes were narrowed down to limited themes or categories and presented in the result section.

4 Results and Discussion

In this study, TI stands for Teacher Interview. Thus, TI1 stands for Teacher Interview 1, TI2 stands for Teacher Interview 2, TI3 stands for Teacher Interview 3, TI4 stands for Teacher Interview 4, TI5 stands for Teacher Interview 5, and TI6 stands for Teacher Interview 6.

Name	Designation	Institute Name	Experience (Year)	Gender	Age	Qualification
TI1	Lecturer	Southeast University	4	Female	30-35	MA
TI2	Lecturer	Uttara University	5	Male	30-35	MA
TI3	Lecturer	Britannia University, Cumilla	5	Female	30-35	MA
TI4	Lecturer	CCN University of Science and Technology	3	Male	25-30	MA
TI5	Lecturer	Southeast University	6	Male	30-35	MA
TI6	Lecturer	Southeast University	16	Female	30-35	MA

4.1 Teachers' Perceptions About AI-enhanced E-assessment

One common trait among all of the interviewed teachers is that they have conducted e-assessments. However, four interviewed teachers among them did not have any training on e-assessments, but two teachers had undergone a training program on e-assessments, which lasted for two days for (TI2) and one day for (TI1). Three of the six teachers interviewed stated that they sometimes prefer e-assessments, but not always. Two teachers stated that they do not prefer AI-enhanced e-assessments, and only one teacher preferred AI-enhanced e-assessments. Three teachers have found AI-enhanced e-assessment less effective in Bangladeshi culture since the teachers are not well trained, and at the same time, it opens up the windows of mismanagement, makes it difficult to supervise, and creates scope for plagiarism.

Two teachers have commented that AI-enhanced e-assessment is partially effective, and one teacher found it effective only if one can manage everything. Three teachers have commented that the feedback-giving quality of the e-assessment is good since they can give feedback to the students individually, which helps them to understand their mistakes, and at the same time, "teachers can provide 'to the point' remarks and feedback by using tools like Grammarly, plagiarism checker, review tool of MS Words, etc., which are otherwise difficult in the pen-and-paper-based exam" (TI6). However, TI3 and TI5 are opposed on this point. According to them, the quality of feedback given in AI-enhanced e-assessments is less satisfactory as the feedback-giving process is indirect, which makes the students insincere about their efforts.

Three teachers among them showed a mixed attitude towards their experience of e-assessment. They commented that AI-enhanced e-assessments are good but have "lots of limitations" (TI3); thus,

e-assessments can be conducted in emergency situations like COVID-19, but teachers should not fully depend on them. One teacher commented that he had good experience with e-assessment and that he thinks it is necessary to adopt new technology and keep ourselves updated as we live in the age of technology. On the other hand, the other two teachers commented that their experience was not satisfactory and that they do not prefer e-assessments in the context of Bangladesh since the students of our country are less concerned about their personal development. "To them, passing the exam and getting good marks and certificates are all that matter, but e-assessments give ample opportunities to check the creativity and higher-order thinking of the students, which hardly can be implemented in the context of Bangladesh" (TI6). Three teachers among them stated that e-assessment is partially suitable for tertiary-level students, especially to engage remote students. One teacher commented that e-assessment is absolutely suitable for tertiary level students, and the other two teachers agreed on the fact that AI-enhanced e-assessment is not suitable for tertiary level students since it "does not offer much scope" (TI5) in our country.

Although e-assessment offers benefits such as cost savings, better accessibility for distance learners, and more flexible feedback mechanisms, this effectiveness is reduced because most teachers have not been properly trained using the technology. Most instructors have adopted e-assessment without proper training, and those who have undergone training reported it was too short to cover essential components, in particular, the AI-integrated functions. This existing gap in knowledge undermines the validity and reliability of assessments because educators may not be able to construct and implement assessments capably.

More importantly, the lack of use of more sophisticated tools, such as automated feedback, hinders the full potential of e-assessment to improve learning outcomes. The way forward requires targeted professional development that will arm teachers with the needed competencies so that e-assessments will support, rather than hinder, the learning process.

Another important fact found is that half of the teachers do not prefer e-assessments except for emergency situations like pandemics, and one third of the teachers do not prefer e-assessments at all, which indicates that e-assessments are not preferred by the teachers in our context. Another important fact found in this study is that the majority of the teachers are doubtful about the efficiency of e-assessment for tertiary level students in the context of Bangladesh because the teachers are not properly trained in this sector, thus they face difficulties in supervising, fail to ensure an e-cheating-free environment, and e-assessment offers less scope in our country. However, most of the teachers showed a satisfactory attitude towards the feedback-giving process of e-assessment, which helps the students learn better, and also mentioned that e-assessment saves money. The facts that are found in this study are important in the education field, as these facts will help the teachers and policymakers decide what measures should be taken for the teachers to increase their knowledge in this sector, arrange proper training for them, and motivate them to adopt this new system and conduct more e-assessments to assess the students.

However, the results fail to address how e-assessment saves costs, as they do not match the previous research where they mentioned that e-assessment is costly (Chung and Choi, 2021). One of the findings of this study matches those of Aktar et al. (2022), Aktar et al. (2022), Abduh (2021), Mirza (2021), Islam (2021), Meccawy et al. (2021), Anasse and Rhandy (2021), and Sultan (2021), where they all mentioned the fact that the teachers face difficulties conducting e-assessments since they do not have any prior training and also do not have proper knowledge to prevent e-cheating and plagiarism.

As mentioned earlier in the introduction, there has been very little or no research in this field in Bangladesh; thus, this is the gap of this study, and the results found in this study will help to fill in the gap. The major findings in this study are that the teachers lack knowledge and proper training in e-assessment; the majority of the teachers prefer traditional pen-and-paper assessments to e-assessments; and they believe e-assessment is not

effective for tertiary-level students in Bangladeshi culture. These findings are important for the overall improvement of the assessment system. Policymakers will be able to take the necessary steps to improve e-assessment based on these findings.

4.2 Challenges of E-assessment

The majority of the teachers commented that they faced infrastructural problems, such as internet problems, scarcity of standard gadgets, other technological problems, a lack of silence, and struggled due to a lack of IT knowledge. For instance, they struggled to use Google Meet or Zoom while conducting e-assessments. One of the teachers stated that “as I am not techno-savvy, my lack of IT skills and ideas of operating educational platforms, my lack of ideas of conducting classes, taking exams, grading, and giving feedback, my initial lack of proper training, the frequency of internet disruptions, helping students out from their initial shock of adapting to online education, being myself also unskilled in the field—all these contributed to my initial haphazard condition of entering the online mood” (TI6).

All the teachers struggled to reduce e-cheating and agreed on the fact that “copying from the internet is a common matter” (TI2). They also struggled to make creative questions in language and literature courses to reduce plagiarism and e-cheating, and they also faced the scarcity of reliable software to check the authenticity of the answers written by the students. The majority of the teachers also mentioned that they struggled a lot to manage time for conducting e-assessments. They had to “sacrifice their personal time” (TI6) and take “loads of pressure” (TI2) for e-assessment. All the teachers faced different health issues. One of the teachers mentioned that “for spending time extensively in front of the computer screen, I suffered a lot from migraine pain, pain in my nerves in my neck, back pain, eye sight got deteriorated, and definitely I gained weight” (TI6). Teachers mentioned that from the students’ end, a lot of issues came up, like lack of attention in study, deterioration of manners, behavioral issues like the tendency to copy and cheat and even go further to defend their crimes, declining motivation, an increase in telling lies, and also that they are hardly satisfied with their grades as most of them perform poorly.

Teachers expressed very serious challenges in using AI-enhanced e-assessment, such as lack of IT knowledge and poor training. Teachers somehow managed to prevent e-cheating, especially plagiarism, which is a widespread student activity

nowadays. Most teachers found e-assessment to be time-consuming, requiring extensive effort and constant monitoring. In addition, many teachers reported health complaints, such as eye strain, back and neck pains, headaches, and weight gain due to prolonged screen time. Students also faced issues, such as low motivation, decreased attention, the tendency to cheat, poor grades, and ethical decline, which further complicated teachers' tasks (Hasan, 2014). Such issues, as mentioned earlier, made the assessment of key language skills very challenging on the teacher's part. In order to stay ahead in terms of grading, students resorted to unethical practices that were detrimental to the traditional way of conducting academic activities.

The results found in this study fill up the gap in this study. The challenges that the teachers faced in e-assessments were infrastructural problems, a lack of IT knowledge, not being able to decrease e-cheating due to a lack of knowledge in e-assessment, and different health hazards, such as neck pain, back pain, eye sight problems, headaches, weight gain, etc. These challenges are faced by teachers all over the world, and these problems are addressed in many research studies in different contexts (Abduh, 2021; Meccawy et al., 2021; Mirza, 2021; Farhat et al., 2021; Fitriyah & Jannah, 2021; Thambusamy & Singh, 2021; Hasan et al., 2020; Hasan et al., 2018, Hasan & Ibrahim, 2017; Sa'di et al., 2021; Hasan & Labonya, 2016a). But in the context of Bangladesh, there has been very little or no research available to address the problems faced by EFL teachers at the tertiary level. Thus, these findings will play a vital role in reducing the drawbacks of e-assessments at the tertiary level in Bangladesh.

4.3 Improving the Quality of E-Assessment

The majority of the teachers commented that to solve infrastructural problems, infrastructural facilities should be increased, such as building own software and IMS systems, website development, the availability to buy standard gadgets, using different software to reduce e-cheating, more financing, and most importantly, "internet facilities have to be improved" (TI3). They also commented that "technical training is important for both teachers and students" (TI4). Most of the teachers agreed on the fact that more training on e-assessment will help to improve the overall quality of AI-enhanced e-assessment, and if training is conducted considering all the necessities, contextual demands, practical needs, and requirements of our educational scenario, then the

teachers will benefit and become more experts in this sector.

Teachers also suggested that formative and constructive feedback on English language courses can improve the challenges of e-assessment. Teachers have suggested some ways to be adopted in order to ensure e-cheating free e-assessment, such as, "exam should be held with open camera" (TI2), teachers should be trained to prepare creative questions and problem solving questions, more presentation and viva should be conducted, "students' mentality should be build up from elementary level" (TI5), "time should be limited for any test" (TI4), "teachers must be groomed to be technically sound to be able to detect any types of cheating and conveying the message to the students that no matter how smart they think they are the teachers will always be many steps ahead of them" (TI6), teachers should be motivated to ensure e-cheating free e-assessment, recognition, appreciation, pay hike etc. should be given to the teachers to encourage them to help ensure cheating free exams.

The quality of e-assessment of English courses can be improved "by changing the traditional exam strategy through creative writing, presentations, sudden quizzes, viva-voce, and project work" (TI2). At the same time, regular, extensive training is also needed for the teachers. Based on the findings of this study, it is clear that in order to reduce infrastructural challenges, improvement of infrastructure is necessary, like ensuring uninterrupted internet connection, making gadgets and high-tech software available for teachers, and ensuring financial stability. Most important, training the teachers on e-assessment and the IT section is also important for the overall improvement of the quality of e-assessment. In order to prevent e-cheating, teachers should create creative questions, assign the students problem-solving tasks, use different software to check copied or plagiarized work, keep the camera on while taking the exams, and assign them projects, presentations, and viva.

Last but not least, teachers should be psychologically sound, and to do that, they should be encouraged by giving them proper appreciation, reward, and recognition so that they feel motivated (Hasan, 2014) to invest their time in making e-assessments more creative and effective. These findings are important because they are the solutions that can be adopted by teachers and policymakers to improve the quality of e-assessments. The authority should arrange frequent training for the teachers to become experts in this

sector and also take the necessary steps to encourage them to conduct e-assessments more. However, the results of this study fail to address what type of training should be given to the teachers and how frequently that training should be conducted (Hasan & Alam, 2016). The results also fail to mention what type of software should be used to reduce e-cheating and what measures can be taken to reduce the health issues faced by the teachers.

In order to reduce infrastructural issues, policymakers need to increase infrastructural facilities, such as a sound internet connection, good software and gadgets, and more e-assessment training for teachers. This finding of this study matches that of Sa'di et al. (2021). Another important finding of this study matches Mirza (2021), where the researcher mentioned that teachers preferred assigning the students assignments, presentations, and project work to avoid e-cheating. However, another important finding of this study that was not mentioned in the previous research is that in order to improve the quality of e-assessment, besides intensive training on e-assessment, the teachers should be motivated and encouraged (Hasan, 2014) to practice e-assessment more by appreciating their effort, rewarding them, and also acknowledging them

(Sa'di et al., 2021; Mirza, 2021; Hasan et al., 2020; Hasan & Labonya, 2016a, 2016b). To improve the overall quality of e-assessment, infrastructural advancement, intensive e-assessment training for the teachers, along with IT knowledge, and the arrangement of gadgets and software are necessary.

Besides them, teachers must change the traditional techniques and apply different creative ways to assess the students so that e-cheating can be reduced. On top of that, teachers' mental and psychological state should be sound so that they can focus more on their work and improve the e-assessment system. These are the suggested solutions for the challenges faced by teachers in the context of Bangladesh. These techniques are mentioned in other research, but in different contexts. In Bangladesh, there is very little or no research available to mention these solutions for teachers and policymakers to improve the e-assessment system. Thus, these findings fill up the gaps in this study.

4.4 Proposed Model on Positive and Negative Aspects of E-assessment

Based on the findings and discussions, the study presents a model (Figure 1) representing positive and negative aspects of e-assessment.

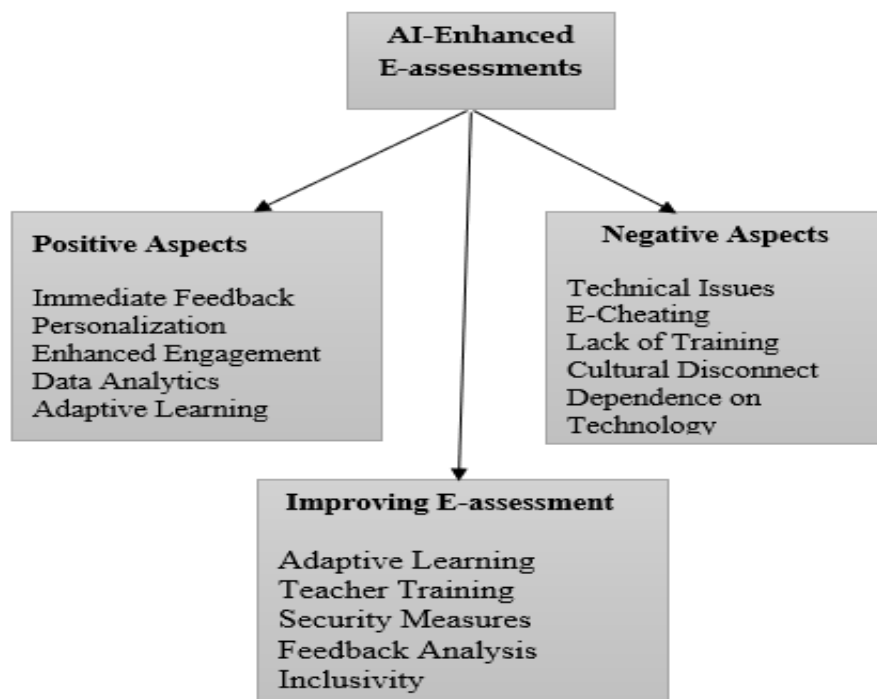


Figure 1: Proposed model presenting the positive and negative aspects with solutions to improve AI-enhanced e-assessments

Proposed Model on Strategies to Improve AI-Enhanced E-Assessments

This model (Figure 2) presents the strategies that can enhance the quality of AI-enhanced e-assessments.

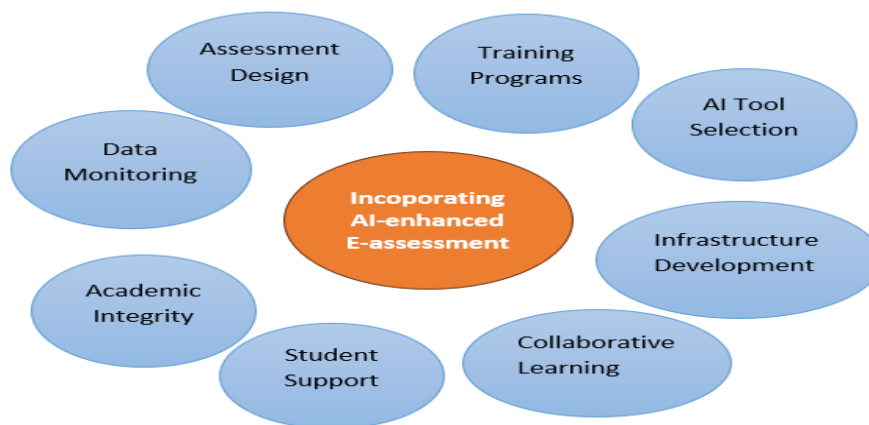


Figure 2: Proposed model presenting the strategies to improve AI-enhanced e-assessments

5 Contributions, Recommendations, Limitations and Conclusions

The research gave ways that could uplift standards of e-assessment, with emphasis on integration of AI-enhanced assessments. The research made suggestions for enhancing the e-assessment capability to guarantee high-quality teaching. There is a need for a holistic approach to boost effectiveness in e-assessment; infrastructural improvement, training of teachers in methodologies of e-assessment and IT skills, and access to necessary technological gadgets and their software to back up such innovation. Assessment methods can be novel and must be tried in reducing incidences of e-cheating. At the same time, strengthening the e-assessment framework also calls for maintaining their focus by prioritizing the mental and psychological well-being of teachers.

The suggestions above identified the ways to overcome various challenges the teachers are facing regarding Bangladesh's educational system in order to create a supportive environment about digital assessment techniques. Besides, this study has tried to fill the literature gap which was considerable in the integration of e-assessments among EFL teachers at universities. Results indicate a need for more training (Hasan & Alam, 2016), supportive policies, easy access to platforms, and collaboration between instructors. Interventions that will be discussed are professional development, technical support, and teaching strategies designed to assist university administration in effectively implementing AI-enhanced assessments.

However, the research has several limitations. The in-depth interviews were conducted with only private university teachers, and the researcher needs to further conduct studies with respondents from public universities. The sample size was limited to six respondents to generalize it. There is a chance of bias; as an online interview, it was based

on personal links. Further, not being able to carry out face-to-face interviews and having limited access to certain literature due to financial constraints are also drawbacks. These gaps need to be considered in further research.

5.1 Research Ethics

This study maintained all the ethical issues, including participant consent, institutional permission, and data preservation with privacy.

5.2 Acknowledgments

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5.3 Declaration of conflicting interests:

There are no conflicting interests.

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Appendix: In-depth Interview Protocol**Demographic Information:**

1. Designation:
2. Which institution are you teaching at?
3. Year of teaching experience (years):
4. Type of your institution-
 - Public
 - Private
5. What is the level of your student you teach?
 - Undergraduate
 - Graduate
6. Which language courses do you teach?
7. Your Gender:
 - Female
 - Male
8. Academic qualifications:
PhD/MA/BA
9. Any Training on E-assessment: Yes/No
10. How long was the training duration?

Questions:

1. Do you prefer e-assessment?
2. What facilities does e-assessment offer? (Please name a few)
3. How effective is e-assessment?
4. What effectiveness does e-assessment offer in grading?
5. How is the feedback giving quality?
6. How will you describe your experience of e-assessment?
7. Do you think e-assessment is suitable for the tertiary level students?
8. What challenges did you face when suddenly shifted from traditional assessment to e-assessment?
9. What challenges do you face in reducing e-cheating in the English language courses?
10. How do you manage the challenge related to time during e-assessment?
11. Do you face health related issues when working on screen for e-assessment purpose?
12. What challenges do you face from students' end regarding e-assessment?
13. What challenges do you face in achieving of learning outcomes by the students?
14. Can you assess four language skills? Please state the challenges you face in assessing specific skills of English language.
15. What measures can be taken to solve the infrastructural challenges?
16. How can training on e-assessment improve time management skill, health-related issues and quality of e-assessment?
17. What type of feedback on English language courses can help reduce the challenges of e-assessment?
18. What measures can be taken to ensure e-cheating free e-assessment of the students?
19. In your opinion, how the quality of e-assessments of English courses can be improved?