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The Reality of TALT at the Tertiary Level in Bangladesh: Teachers' Perspective

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ABSTRACT
This paper investigated the level of preparation of the English language testing structure at the tertiary level in Bangladesh to harness the technological advancements of the Fourth Industrial Revolution (4IR). Exploring the tertiary-level teachers' experience with technology-assisted language testing (TALT), this study tried to discern whether TALT is a tangible reality or only a vision in the English language testing field. This study surveyed 57 teachers from public and private universities in Bangladesh adopting a quantitative approach. The findings demonstrate that TALT is not a vision in Bangladesh, as the tertiary level teachers frequently use technology tools to assess the learners' language skills. Teachers have proficiency in using technology and students feel encouraged to sit for the technology assisted language tests. This study also reveals that teachers from private universities have more experience with TALT and receive more training opportunities compared to their counterparts in public universities. However, many teachers are concerned about the technical problems that may arise during the tests and institutions' inadequate funding and opportunities for using TALT. So, this paper finds the necessity to provide satisfactory technical support, funding, and training opportunities for teachers to enhance their competence in adopting TALT.
Key words: English language testing, TALT, Teachers' perspective, Tertiary level, 4(IR).

INTRODUCTION

In this era of globalization when the fourth industrial revolution is happening, connectivity, creativity, critical thinking, and collaboration have become integral parts of our lives; and these made us live more in a virtual world than in reality. The COVID-19 pandemic has accelerated the situation. In the field of education pedagogy, exposing the unanticipated, alarming, and shocking issues about the unpreparedness of the teaching and testing system to face the educational crisis, the pandemic has led us undeniably to digitalization. The English language testing field at the tertiary level in Bangladesh is no exception. The rapid advancement of technology in education is reshaping the landscape of English language testing.

At present, integrating Fourth Industrial Revolution (4IR) technology has become essential on a global scale. In education, the huge advancements of 4 (IR) in the fields of quantum computing, AI (Artificial Intelligence), robotics, etc. are being implemented by the government, policymakers, and teachers to make teaching and testing more attractive and effective. The proliferation of technology has emphasized the significance of the English language—a fundamental subject of instruction, a prospectus [1]. As technology progresses, educational institutions are exploring approaches to accurately and efficiently measure English language proficiency [2]. However, the new technologies also bestow newer challenges and responsibilities on the shoulders of language teachers. There is an urge for curricula to evolve and align with the principles of Education 4.0, emphasizing critical thinking, creativity, and problem-solving skills [3], [4].

The mandate for technology-assisted English language testing (TALT) has become increasingly urgent, particularly in the circumstance of the global spread of COVID-19. The pandemic has brought to light unexpected trials in the realm of education pedagogy impacting development courses on a worldwide scale since 2020 [5], [6]. Moreover, the trends in higher education in recent times show the increasing attention to quality education that requires teachers, instructors, and policymakers to reconsider and rethink teaching or instructional practices and testing [7], [8]. At the tertiary level, learners are more diverse culturally and linguistically "in their cognitive abilities, learning preferences, background knowledge, and have various levels of strengths and weaknesses in the area of multiple intelligences" [8]. Therefore, well-designed tests that afford plentiful openings for showcasing diverse skills are crucial in this context. However, despite the potential benefits, integrating technology into English language teaching and testing at the tertiary level in Bangladesh is at a crossroads. Due to many challenges, teachers fail to get the maximum benefits of technology [9]. The challenge often lies in the failure to establish a precise link between the use of technology and its exercise in language pedagogy [10].

We are living in a hybrid space [11]. Today learning happens through social interaction. Technologies and social networks expose new opportunities for learners irrespective of time and place. So, digital education is a matter of urgency. New technologies can tailor and ensure more original and cutting-edge English language testing methods. New technologies have created prospects for sharing knowledge and widening horizons for students to be global citizens. However, it demands sufficient command of technology, the ambiance of using technology, and the affordances of technologies. The biggest challenge of technology is not the technology itself but rather its impact on human beings, on their lives. At present teachers and learners at the tertiary level in Bangladesh are noticed to use technologies to learn the English language [12]. Some researchers have found that teachers and learners are keen to get the benefits of digitalization [13], [14]. However, many challenges like teachers' lack of training, experience, time, and motivation [15], learners' fear, inadequate access to technology, etc. create barriers to the utilization of technology in English language testing at the tertiary level in Bangladesh.

This paper aims at studying various facets of tertiary-level teachers' experience with technology-assisted English language testing (TALT) in Bangladesh, addressing the overarching question of whether technology is a mere vision or a palpable reality in this context. The study surveys 57 tertiary-level teachers to develop an inclusive understanding of the topic. The paper is designed to answer two fundamental questions: a. What are the attitudes and experiences of teachers for using TALT at the tertiary level in Bangladesh? b. How much is English language testing at the tertiary level in Bangladesh equipped to use the technological advancements? The Objectives are: to explore the attitudes and experiences of teachers for using TALT; and to investigate the readiness of English language testing at the tertiary level in Bangladesh for embracing the technological advancements of the Fourth Industrial Revolution (4IR). The article addresses the prevailing practices of technology incorporation, as well as the concomitant challenges and prospects of TALT in English language testing at the tertiary level.

BACKGROUND OF THE STUDY

Globalization and industrialization have transformative effects on educational institutions, especially higher education. The twenty-first century promotes competitiveness, innovation, and highly skilled professionals for the increasing industries and job sectors. The top priority is put on English language education for career development, and national and global welfare [16].

During the First Industrial Revolution (1775-1900), the workplace underwent a noteworthy transformation as machines exchanged humans and animals, impacting the education sector greatly. Klaus Schwab in *The Fourth Industrial Revolution* [17] discussed how the First Industrial Revolution needed skilled and educated labor in workplaces. The Second Industrial Revolution (1901-1960) was marked by huge developments in communications, transport, manufacturing, etc. [18]. The Third Industrial Revolution (1961-2000) marked important advancements in computerization, the internet, and digitalization. The fourth industrial revolution (2000-) has widely integrated

technology into various aspects of human life. According to Stearns [19], this revolution is estimated as the most crucial development in the past three centuries. The 4IR is steering society towards "digital domains," where individuals can engage with each other in a virtual world [20]. 4IR represents the intersection of various technologies in the physical, digital, and biological realms, setting it apart from early revolutions [21].

Countries worldwide, including Bangladesh, are trying to embrace the changes brought about by the technologies of the fourth industrial revolution that necessitate proficiency beyond basic digital literacy. To ensure the successful application of technology in English language classrooms, teachers play a crucial role [10]. Many types of research have been done on the role of teachers in education [22], [23]. Petko et al. [24] focused on teachers' preparedness to integrate technology into education. Because if the teachers are not aware of online pedagogy and other factors associated with it, the goal of digitalization in the education sector will never be fulfilled. Ivy [25], and Shohel and Kirkwood [26] also stressed extensive training opportunities for the teachers to be fully equipped in technology-assisted teaching and testing in Bangladesh. Hence, teachers' attitudes and experience should be taken into consideration for policy making, designing, and planning curricula and syllabi for English language teaching and testing.

METHOD

The researchers chose a quantitative approach to investigate the research questions. This approach also aligns with the objectives of the study. One structured questionnaire formed on a five-point Likert scale that consists of 5(Always), 4 (Very often), 3 (Often), 2 (Sometimes), and 1 (Never) was used to collect data from the tertiary-level teachers of Bangladesh. A stratified purposive sampling procedure was followed to collect questionnaire-based quantitative data. Data were collected from 57 tertiary-level teachers (public and private universities) in Bangladesh. Statistical Package for the Social Sciences (SPSS 25) and MS Office tools were used to process the data.

Validity and reliability

To ensure validity and reliability issues, this study follows some ethical principles related to research. In the beginning, a structured questionnaire that would answer the research questions and fulfill the research objectives was designed. Then the questionnaire was sent to 4 public university teachers (two teachers who have 1-10 years of teaching and testing experience and the other two who have more than 10 years of teaching and testing experience) and two private university teachers for a piloting process. Based on the feedback and suggestions of the pilot study, the researchers modified the questionnaire. They also incorporated the suggestions of two renowned professors in Bangladesh experts in the English language testing field. To make the survey valid, the researchers prepared a letter of consent for the participants and collected consent from them before they participated in the survey. The researchers also got an Ethical Clearance Certificate with reference no: KUECC_2024-07-51, from the Research and Innovation Centre, Khulna University for conducting the survey. The review of the literature also guided the researchers to conduct the research convincingly. Cronbach's Alpha was used to conduct a reliability test. Cronbach's Alpha scores range from 0 to 1. In this study, Cronbach's alpha values for the questions on teachers' experience with TALT were 0.881 which represent greater consistency [27]. Multifactor ANOVA was used in a multivariable analysis to model the relationship between the outcome variable (teachers' experience with TALT), and independent variables (gender, age, institution type, and teachers' training on TALT). The impact of a single factor and the combined influence of multiple factors on the outcome variable were referred to as the "main effect" and "interactive effect," respectively. Before conducting ANOVA, the equality of variances was assessed by Levene's Test (homogeneity test) [28]. The following hypotheses were tested.

Hypothesis 1: Gender, age, institution type, and teachers' training on TALT significantly impact teachers' experience with TALT.

Hypothesis 2: There are significant interactions among gender, age, institution type, and teachers' training on TALT.

Hypothesis 1 analyzes whether each factor can significantly affect teachers' experience with TALT. Hypothesis 2

analyzes whether there are significant interactions among gender, age, institution type, and teachers' training on TALT.

RESULTS

The findings of the study are as follows:

Background characteristics of the participants

57 participants participated in the survey, of whom a total of 36 participants (63.2%) were male teachers and 21 participants (36.8%) were female teachers. Among all the participants, 61.4% (35 participants) were within the age range of 25-34 years, 16 participants. (28.1%) were within the age range of 35-44 years and 6 participants were within the age range of 45-54 years (10.5%). 24 teachers have professional training on TALT but more than half of the participants do not have any professional training on how to conduct technology-assisted English language testing.

Demographic information	Frequency (N)	Percentage (%)
Gender		
Female	21	36.8
Male	36	63.2
Age (years)		
25-34	35	61.4
35-44	16	28.1
45-54	6	10.5
Institution type		
Public University	23	40.4
Private University	34	59.6
Teachers trained on TALT		
No	33	57.9
Yes	24	42.1

Table 1 shows the demographic information of the participants.

Teachers' experience with technology-assisted English language testing (TALT)

This section shows the findings of the teachers' statements. The questionnaire was focused on teachers' experience, expertise, and perception of technology-assisted English language testing (TALT) at the tertiary level in Bangladesh to investigate whether TALT is only a vision or the application of TALT is fully possible. To answer the research questions and attain the objectives of the paper, the data presented in Table 2 on the perception of teachers' experience with TALT plays a crucial role.

Statements	Mean	SD	Always (%)	Very often(%)	Often (%)	Sometimes(%)	Never (%)
I integrate technology into language testing.	3.40	0.98	10.5	40.4	31.6	14.0	3.5
I utilize various technological tools for different types of language assessments (e.g., listening, speaking, reading, and writing).	3.74	0.97	19.3	49.1	21.1	7.0	3.5
I have proficiency in using technological tools for language assessment purposes.	3.89	0.90	24.6	49.1	19.3	5.3	1.8
I encourage students to use technology for self-assessment and practice.	4.18	0.76	35.1	50.9	10.5	3.5	0

I address any technical issues that arise during language assessments.	4.02	0.92	31.6	47.4	14.0	5.3	1.8
I search for new technological tools and resources for language testing purposes.	3.67	1.09	21.1	43.9	22.8	5.3	7.0
I am willing to incorporate TALT into teaching practices.	4.11	0.82	31.6	52.6	12.3	1.8	1.8
Students feel motivated when technology is incorporated into testing.	4.12	0.87	35.1	49.1	10.5	3.5	1.8
The institution provides adequate funding for acquiring and maintaining the technological resources needed for TALT.	2.91	1.15	8.8	24.6	26.3	29.8	10.5
The institution offers professional development programs to help teachers improve their skills in integrating technology effectively.	2.81	1.12	7.0	22.8	24.6	35.1	10.5
The institution has a stable internet connection and sufficient bandwidth to support	3.40	1.15	15.8	36.8	28.1	10.5	8.8
TALT. N=57	3.66	0.66					

Table 2. Teachers' experience, expertise, and perception of using TALT at the tertiary level

The data in Table 2 (item 1) indicate that 10.5% of teachers always integrated technology into language testing (mean 3.40). A big portion of respondents (40.4%) very often used technology in case of testing the English language. Only a few (3.5%) teachers never used technology in language testing. More than half of the teachers (item 2) reported that they utilized various technological tools for different types of language assessments (e.g., listening, speaking, reading, and writing) ('always' 19.3% and 'very often' 49.1%). The data in items 3 and 4 show that most of the teachers had proficiency in using technological tools for language assessment purposes (mean 3.89) and they encouraged students to use technology for self-assessment and practice (mean 4.18). A huge part of respondents (31.6% + 47.4%) asserted that they addressed any technical issues that arose during language assessments (item 5). In the table (items 6 and 7) we find that teachers were positive in searching for new technological tools and resources for language testing purposes (mean 3.67, item 6) and willing to incorporate TALT into teaching practices (31.6% + 52.6%, item 7). According to a huge portion of teachers (mean 4.12), students felt enthusiastic and motivated when testing incorporated technology (item 8).

However, in the case of institutions' funding for acquiring and maintaining the technological resources needed for TALT, only 8.8% (item 9) of the teachers claimed that the institution always provided adequate funding (mean 2.91). According to 29.8% (7%+ 22.8%) of the teachers, tertiary institutions offered professional development programs to help teachers improve their skills in integrating technology (item 10). In item 11, the data show the tertiary institutions' worth of having a stable internet connection and sufficient bandwidth to support technology-assisted language testing as 52.6% (15.8% + 36.8%) of the respondents reported the same.

Results of the hypotheses tests

Tests of the multifactor ANOVA's fundamental assumptions require that primarily the tests of homogeneity of variance (gender, age, institution type, and training on TALT) must be conducted before doing an effect analysis (primary effect and interaction effect of the components). Table 3 shows the test of homogeneity of variances. The

results are not statistically significant indicating that the variances among the groups of each variable are equal. So, the study's result met the assumption of homogeneity of variance and was eligible to conduct ANOVA.

Levene Statistic	df1	df2	Sig.
1.611	17	39	.109

Table 3. Homogeneity test on teachers' experience with TALT as the dependent variable

In Table 4, multifactor ANOVA has been conducted to examine the impact of independent variables (gender, institution type, age, and teachers' training on TALT) on the dependent variable (teachers' experience with using TALT at the tertiary level in Bangladesh). There is a significant interaction between two independent variables (gender and institution type) and the dependent variable (teachers' experience with TALT) with the mean value (F = 8.962, p-value = <0.05). Here, the main effect of institution type is significant even after adjusting gender, teachers' training on TALT, and age group (F = 4.519 and p-value = <0.05). However, the main effect shows no statistically significant difference in gender (p-value =0.45), age (p-value =0.90), and teachers' training on TALT (p-value = 0.65).
The interaction between two independent variables (gender and teachers' training on TALT) and teachers' experience with the use of TALT is found statistically significant (F = 8.982, p-value = <0.05). Furthermore, significant interaction is found between age, institution type (independent variables), and dependent variable (F = 3.432, p-value = <0.05).

Source	**Sum of Squares**	**df**	**F**	**P-value**
Gender	.199	1	.581	0.45
Age	.072	2	.105	0.90
Institution type	1.552	1	4.519	**<0.05**
Teachers' training on TALT	.068	1	0.199	0.65
Gender * Age	.509	1	1.481	0.23
Gender * Institution type	3.078	1	8.962	**<0.05**
Gender * Teachers' training on TALT	3.085	1	8.982	**<0.05**
Age* Institution type	2.357	2	3.432	**<0.05**
Age* Teachers' training on TALT	1.296	2	1.886	0.16
Institution type * Teachers' training on TALT	1.568	1	4.565	**<0.05**
Gender* Age *Institution type	.239	1	.695	0.41
Gender* Age* Teachers' training on TALT	.629	1	1.832	0.18
Institution type* Age* Teachers' training on TALT	.458	2	.667	0.52
Error	13.731	39		
Total	787.752	57		
Corrected Total	24.795	56		

Table 4. Multifactor ANOVA on teachers' experience with TALT as the dependent variable

Null hypotheses: 1. Gender, age, institution type, and teachers' training on TALT have no significant impact on teachers' experience with TALT at the tertiary level in Bangladesh. 2. There is no significant interaction between gender, age, institution type, and teachers' training on TALT (independent variables) and teachers' experience with

TALT at the tertiary level in Bangladesh.

The interaction between gender vs. institution type and gender vs. teachers' training on TALT groups' impact on the outcome variable (teachers' experience with TALT) is depicted in Figure 1.

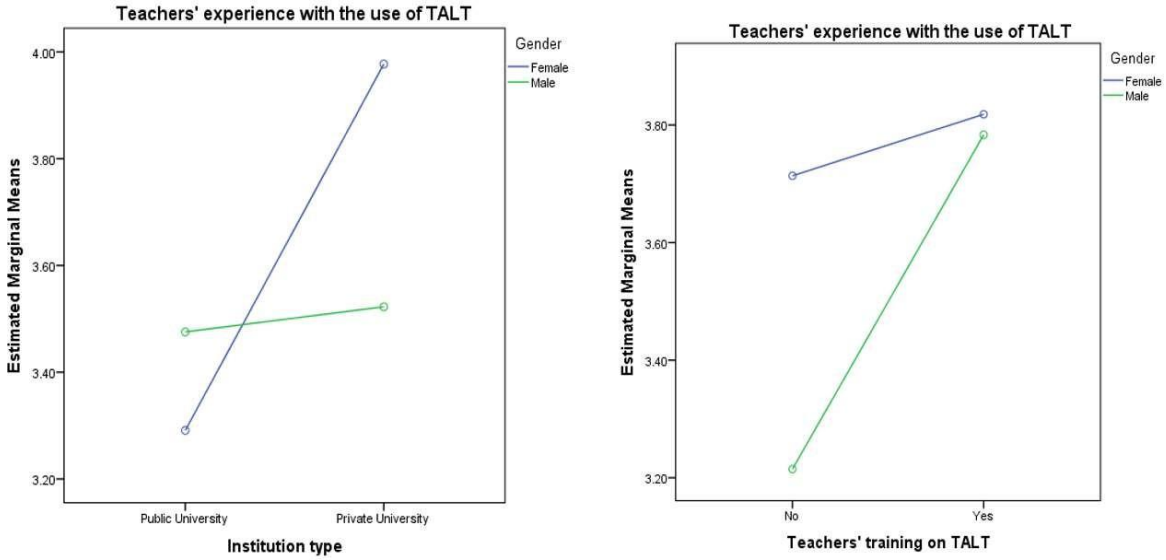

Figure 1. Estimated means by interaction terms

Figure 1 shows that the experience of private university female teachers with TALT is more positive than that of private university male teachers. The mean value of teachers' experience with TALT is quite similar for both public and private university male teachers. Male teachers who received training on TALT have significantly positive attitudes toward TALT.

On the other hand, as shown in Figure 2, there is a significant interaction between institution type and teacher's training on TALT and dependent variable with the mean value ($F = 4.565$, p-value = <0.05). The mean value of teacher's experience with TALT is quite similar range for public and private university teachers who are not trained on technology use (Figure 2). However, teachers at private universities who have received training on the use of technology in language testing report a more positive experience with TALT than teachers at public universities.

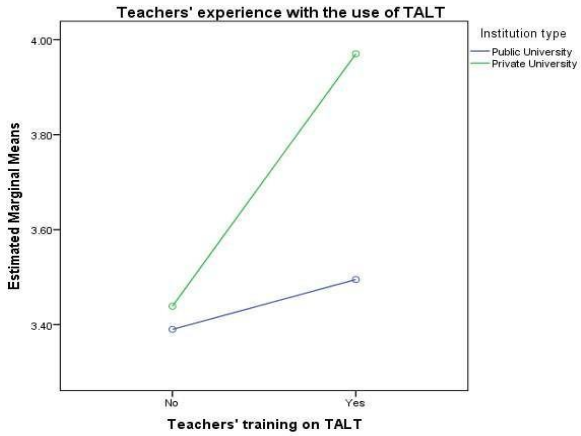

Figure 2. Estimated means by interaction term of institution type and teachers' training on TALT

The interaction between age and institution type groups' impact on teachers' experience with TALT at the tertiary

level is depicted in Figure 3. The mean value of teachers' experience with TALT is higher for private university teachers who are 25-34 years and 45-54 years age groups than the public university teachers with the same age groups. On the contrary, public university teachers whose age range is between 35-44 years have more positive experience with the use of TALT than private university teachers in the same age group.

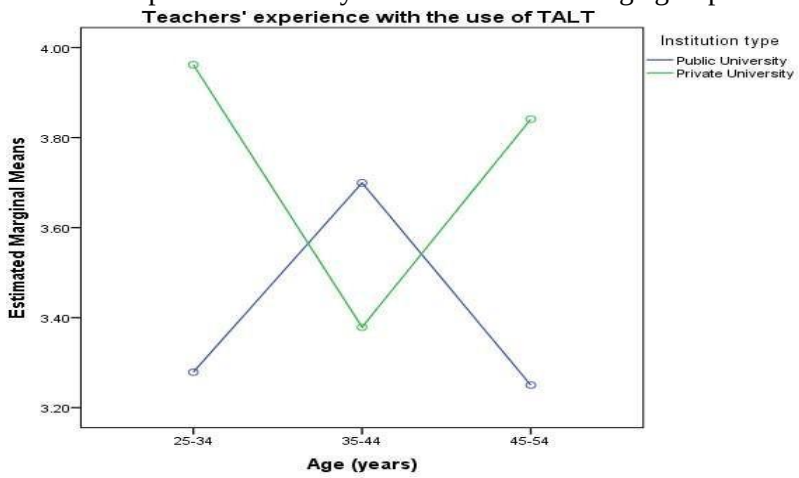

Figure 3. Estimated means by interaction terms of age and institution type

DISCUSSION

Technology-assisted English language testing (TALT) dates back to the 1960s [29]. Today TALT in the field of higher education is so widespread that it becomes a crucial part of quality education. At present Computer adapted tests (CAT), Web-based tests (WBT), Mobile assisted language tests (MALT) are so inclusive that these are used not only for test delivery but also for evaluating responses [30]. In countries like Saudi Arabia, Turkey, Canada, England, USA e-learning platforms have already been established and these countries are using technology to assess learners' language ability. Technology-based testing can overcome many problematic issues associated with traditional testing practices. In CALT questions are presented in the forms of text, audio, video, graphics, charts, etc. that effectively "simulate the target language use situation which enhances the authenticity of test tasks" [31]. The realm of TALT is expanding day by day. It is used not only "to score objective type of data but also to access and rate much more complex task types like essays and spoken English" [30].

If we look at the scenario of Bangladesh, we will find that digitizing the education sector has gotten impressive attention in recent times. Almost all the universities are covered by Wi-Fi connection and the majority (15.8%+ 36.8%) of the teachers reported the same issue (mean 3.40). Teachers are motivated (mean 4.02) to get benefits from technology and are willing to use new technological tools and resources for eliciting learners' language skills. Learners feel more motivated when language testing is done with the aid of technology (mean 4.12). Learners now learn from YouTube videos where they comprehend the issue better by watching body language and knowing paralinguistic features [32]. Teachers (19.3%+49.1%) are positive about to use of technology in testing and they use various technology tools for evaluating various language skills. Qualified ELT teachers are joining the universities which enable learners to interact better than before [33]. Teachers believe (mean 3.89) that they have competence in using technology for testing purposes. Moreover, the University Grants Commission has taken the initiative to train newly appointed university teachers in English language skills. Hence, TALT is not a vision in Bangladesh. However, we should consider the fact that many institutions at the tertiary level do not use technology to provide quality teaching and testing [34]. Technology in higher education can provide a lot of benefits like access to authentic materials, access

to digital libraries, group chat, discussion forums, submission of exam papers, online assignments, etc. However, there is a scarcity of initiatives to use technology fully. The tertiary institutions (mean 2.91) should provide adequate funding for using available technological resources. Again the institutions should provide training opportunities for the teachers to enhance their digital literacy. A large part of teachers (35.1%+ 10.5%) reported the inadequacy of training opportunities provided by the tertiary institutions. The scarcity of trained /skilled English teachers is a challenge in the context of Bangladesh [35]. TE (Teacher Education) is an undeniable step for enhancing teachers' cognitive skills and dexterity [36]. The objective of any training education is to attain a considerable change in teachers [37]. Karim et al. identified an inadequate "knowledge base" [35], especially inadequate knowledge of technology in teacher education programs. Hamid [38] also detected a lack of substantial knowledge of practical issues in the training programs. Karim, Mohamed, and Rahman [39] talked about the inclusion of mobile learning and technology in teacher education. Douglas [40] stated that technology is "an inescapable aspect of modern language testing". Hence, workshops and training programs for teachers on technology use in language testing should be taken into consideration by the government, policymakers, and tertiary institutions.

CONCLUSION

The success of any language policy depends largely on the quality of testing. There is a close affinity among English language teaching, learning, testing practices, and curriculum implementation in Bangladesh. For measuring students' skills, English language tests should be constructed appropriately following proper principles and procedures, and teachers play a pivotal role here. If they are not competent enough, the whole testing system will fall apart. The educative value of TALT is much in the present world of science and technology. When the world is progressing in integrating 4(IR) technology in testing, Bangladesh should also use technology in the testing field to get phenomenal benefits. Paper-and-pencil-based tests often exclude two vital language skills, listening and speaking from the test tasks which have severe washback effects. In real situations, learners struggle to write an essay correctly and achieve a level of communication skills. This failure should be acknowledged as an urgent crisis.

At the tertiary level in Bangladesh, English language teachers are willing to explore the technological resources available in language testing. They are motivated to upgrade their technological knowledge to cope with the changing scenario of the use of technology and science. However, some issues, like lack of security, technical expertise, maintenance, internet connection, gadgets, motivation, techno-fear, etc. are hindrances for language teachers to use TALT at the tertiary level. Government, policymakers, and tertiary institutions should take proactive measures, i.e., needs analysis, collecting feedback, arranging workshops, webinars, and courses on CPD, access to technology tools, and technical support, etc. in these regards.

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CONFLICT OF INTEREST

None of the authors show any conflict of interest.

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