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Problems and Prospects of Computer Assisted Language Testing: A Case Study on the Students of Northern University of Business and Technology, Khulna, Bangladesh

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ABSTRACT : *The purpose of this qualitative pilot study was to identify issues and potentials of CALT in the context of the students studying English at Northern University of Business and Technology, Khulna, Bangladesh. Quantitative research design was administered in the study whereby data was collected using random sampling technique of 70 participants (60 students and ten teachers). To obtain primary data two different sets of multiple-choice questionnaires were used and secondary data was obtained from research articles, dissertations and conference papers. The study applied various statistical tools such as Microsoft Excel to analyze the responses and was presented in Pie charts. The outcomes revealed that there were also potentials for CALT to raise various issues: accessibility, real time feedback and multimedia integration. A number of technical issues were unfolded including interruptions in internet connection, high variability in the automatic scoring mechanisms, and low technological literacy levels among the users. Findings also pointed out that compared to paper-based assessments, CALT testing was less time-consuming and offered the potential for a more thorough evaluation of language proficiency. But, due to the issues of security and restriction by automated systems, it was not reliable and accepted. The findings of the study thus called for infrastructural developments, teacher-proficiency and policies to eradicate the barriers to realize the potentials of CALT in the respective fields.*

Keywords-: *CALT, language testing, technology, paper-based tests, computer-based tests*

I. INTRODUCTION

Teaching and testing are two complementary activities; teaching cannot be performed without testing because the overall efficacy of teaching is gauged by testing. However, not only content but also the methods of testing as a part of teaching need to be established and fit for the modern context. Many conventional testing practices involve writing and neglect other germane skills, which include listening, speaking, and reading. Nonetheless, with advancements in technology,

and the rise of COVID-19, CALT is used to take its place and balance this with the orientation of new age language assessment.

CALT can be described as an identified procedure in which language use is prompted and evaluated with aid from computer as indicated by Noijons (1994, p. 38). It originated in the 1960s as with the developments in language teaching (Chapelle and Voss, 2016). The first application, therefore, includes IBM's Model 805 for scoring objective tests where technology outcompeted itself with efficiency in the accomplishment of the task at hand (Sulaiman& Khan, 2019). During the 1980's, CALT achieved a lot of enhancement evident in revamping of traditional practices in the administration of language tests.

CALT focuses on four essential language skills. These include; reading, writing, listening, and speaking. It involves different types of tests such as Quiz test, written test and oral test so that the entire horizon of functioning gets covered (Pathan, 2017). However, there are several weaknesses which are: fluctuating network connection, or problems with computer connection, improper scores given by the auto scorer, and reliability of feedback especially in speaking and listening tests. Both teachers and students encounter some challenges in making use of these technologies.

However, CALT correlates to the requirements for the Fourth Industrial Revolution (IR4) as well as improves language evaluation especially ESP. These insights are exemplified through examining the example of CALT with reference to the IELTS and TOEFL tests which together with other types of tests of language proficiency. All in all, there are still some problems, but such a framework as CALT brings a number of possible improvements for a language testing specialization, which implies the enhancement of technical and communicative skills important to the present day.

II. OBJECTIVE OF THE STUDY

The objective of this study was to explore the prospects and problems of CALT experienced by the students of English Department while using it.

III. LITERATURE REVIEW

This section covers a number of reviews in the respective arena of the study to have more insights into the phenomenon to be dealt.

The introduction of computer technology in language teaching and testing has had a revolution. There is evidence to believe that CALT has several implications that make a reductionist approach possible; for example, Pathan (2017) has expressed that CALT reduces administrative burdens like invigilation. Web based testing is also supported by Roever (2001) because it can be done at any time and any place provided there is a computer with a link to the internet. The modularity helps test takers and test designers in the way of easy sharing of tests and providing feedback to each other.

Some of the benefits of CALT that Pathan (2017) has shown in his study include: Place, individuality, immediacy, and validity of abilities test delivered by speakers using AAPLE. According to Alderson (1990), not only does the computer help the teacher to control time through prompts and timers, the computer can measure time and record completion times. According to GarcíaLaborda (2007), online testing is faster, efficient and less costly than the traditional method of testing. Multimedia prompts improve reality, while adaptive tests enable fast identification of mistakes and share of solutions and feedback.

Pathan (2017) categorizes the implications of CALT into three areas: universities and other institutions of higher education, language instructors and learners. For the institutions, CALT has provided solutions to most of the bureaucratic procedures. Teachers stand to gain from what learners do in terms of strategies emanating from such tasks while learners get feedback

almost instantly which is healthy for their learning process. Successful attempts as use of multimedia demand a real-life testing environment as pointed out by Chapelle and Voss (2016). Teo (2012) has used computer-assisted dynamic assessment (C-DA) for metacognitive reading strategy; this is the kind of CALT that can enhance strategic learning in large classes.

Nonetheless, using CALT is not without its problems. Pathan (2017) has pointed out that security issues effectively exist in high-stake tests, technical skills are a prerequisite for the implementation of the tests, and limitations of the genres that may influence the quality of tasks are also key components. Another problem is with an issue of inaccuracy of automated scoring. Chalhoub-Deville (2001) has rightly pointed out the danger of the efficiency drive and called for radical rethink of assessment practices.

Another concern is its comparability with more conventional pencil and paper exams. Sawaki (2001) has found a moderate level of equivalidity of computer-based test scores with that of paper and pencil test scores. Ockey (2009) has stated that there are limitations that hinder effectiveness of CALT which has not reached its full effectiveness. However, there is agreement with Douglas (2010) that the natural language processing is advanced but argued that their reliance on such systems for the language assessment continues to remain an aspiration.

So, the literatures that have ever been reviewed above are closely connected to the present research with thoughtful insights into the current area of the study though the context of the present study is different.

IV. RESEARCH GAP

While numerous experimental and quantitative investigations have discussed the advantages and disadvantages together with the consequences of Computer-Assisted Language Testing (CALT), only few researches have discussed on it in relation to the developing countries like Bangladesh. Previous literature includes international settings or well-known tests such as IELTS and TOEFL, while the current study is set in localized learning environments, where infrastructural constraints, digital literacy, and values implicated by incorporation into instruction remain appreciable concerns here. To be precise, there is a constraint of literature focusing on the practical reality and attitude of students and teachers of various private universities especially of a category like Northern University of Business and Technology, Khulna. This gap calls for a study which aims at exploring how CALT can be implemented in the field of language assessment.

V. THEORY APPLIED IN THE STUDY

In evaluating the CALT model, this study uses Chapelle's (2001) CALL framework that focuses on interaction, authenticity, and agency. The theory is especially willing to employ technology to replicate real-life communication conditions so that the tests can be in line with the real-world language use. Sociocultural development as expounded by Vygotsky (1978) also guides the study because it favors the centrality of social and technological tools for learning. These frameworks are used to discuss CALT's integration to examine the relationships among learners, technology, and linguistic tasks. As the work aligns theoretical frameworks with practical findings, the study highlights how CALT can revolutionize language assessment through versatile, realistic, and responsive assessment methods.

VI. METHODOLOGY

This present study is categorized in type of exploratory research that intends to identify the issues and opportunities of Computer-Assisted Language Testing (CALT) for students of the English Department, Northern University of Business and Technology, Khulna. A quantitative

method of data collection and analysis was used in this study. The study involved 70 participants, 10 teachers and 60 students from Honours 3rd and 4th year, randomly sampled. Two distinct sets of questionnaires were designed: first one consisting of 14 multiple-choice questions aimed at students, and the second one consisting of 9 questions designed for teachers. The responses were captured by a Likert scale of five response levels which are: Agree, Strongly agree, Neutral, Disagree, Strongly Disagree. The participants were able to fill the surveys themselves with almost no assistance from the researcher. The data collected were, therefore, computerized, and the analysis was done using Microsoft Excel and presented using pie charts and tables as appropriate. Survey data were collected as primary data and analyzed, in addition to secondary data from journals, articles, and research papers. There is a gap within this research, in that not only individuals living and working in the capital city have been surveyed, but those in the periphery of Bangladesh to also gauge students' feelings toward CALT and the results of its usage. Therefore, the study focuses on a comparative analysis of the accessibility and usability of CALT compared to conventional paper-based tests in the targeted learning environment and suggests practical recommendations to enhance the effectiveness of CALT in such academia.

VII. FINDINGS

To satisfy my research objectives and research question, the data collected from the 5-point Likert scale questionnaire are analyzed with the help of Microsoft excel. There are fourteen close-ended questions in one questionnaire for students and nine close-ended questions in another questionnaire for teachers. There are sixty students and ten teachers as my study samples from English Department, Northern University of Business and Technology, Khulna.

Findings from Students Survey Questionnaire

Figure 1: Availability of internet is a must

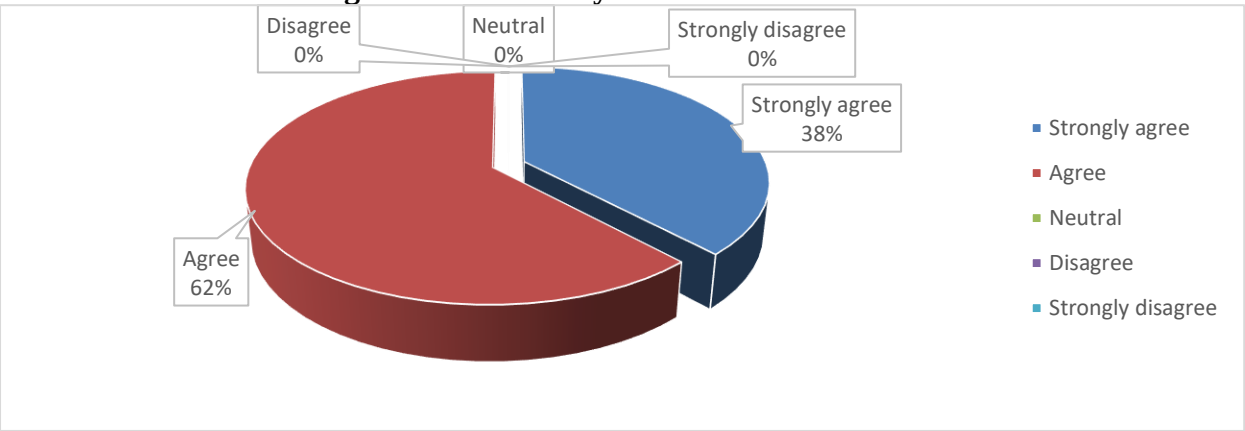

Figure1 shows that 62 % students agree with the above statement and 38% students strongly agree with the statements. Again, no student denies the statement. This data suggests that all of the students think that availability of internet is a must for CALT and no one denies this statement. It bears the testimony that it is the most acceptable problem by the students.

Figure 2: CALT is costlier than paper pencil-based test.

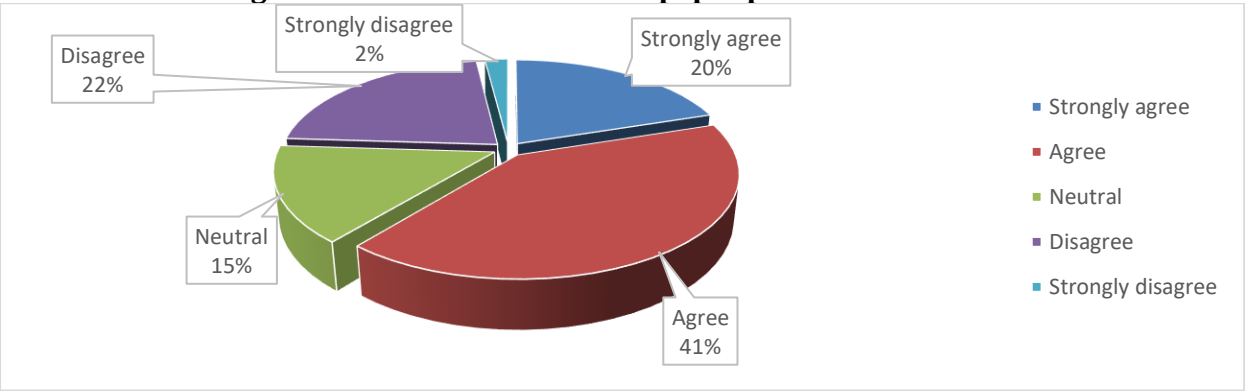

Figure2 shows that 41% respondents agree and 20% respondents strongly agree with the statement. It means they think that CALT is costlier than paper-pencil based test. They feel it as problematic. 15% respondents are neutral with the statement. 22% respondents disagree and 2% respondents strongly disagree with the statement. It means that they don't consider it as problematic. Finally, the result suggests that majority of the respondents consider CALT as problematic for its cost.

Figure 3: Students face different types of technical problems during the test.

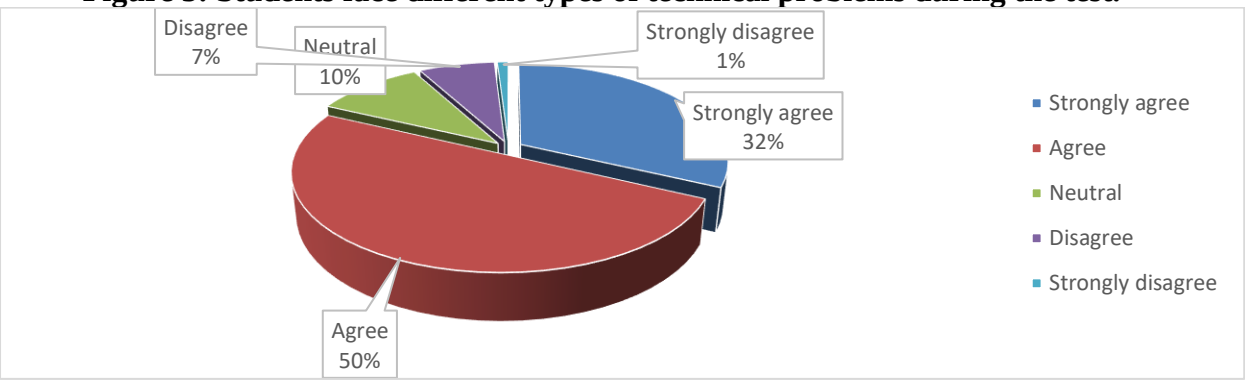

Figure3 shows that 50% respondents agree and 32% respondents strongly agree with the statement that they face technical issues during CALT. 10% respondents are neutral. 7% respondents disagree and 1% respondents strongly disagree with the statement. That means they don't feel CALT as problematic for technical issues. Moreover, majority of respondents consider CALT as problematic for different technical issues.

Figure 4: There is a chance to adopt unfair means like copying from any sources without documentation during the test.

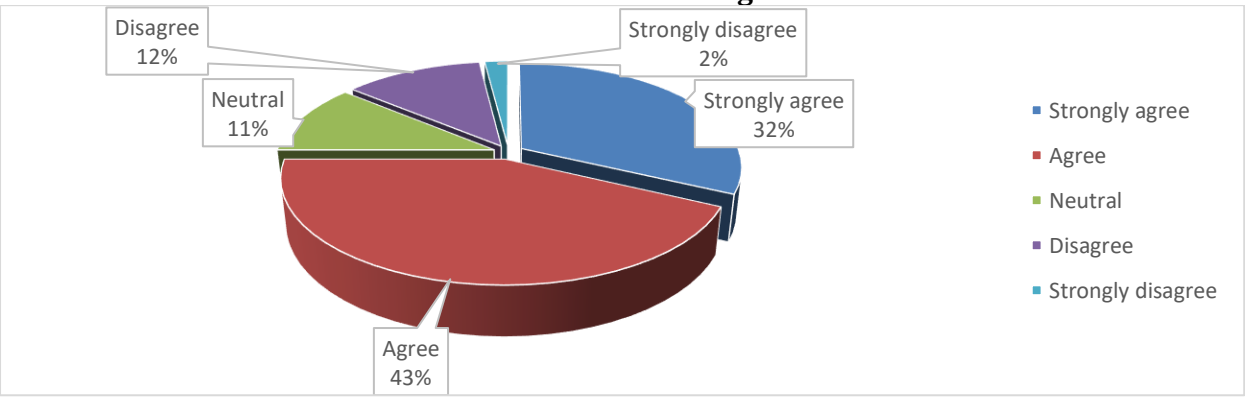

Figure4 shows that 43% respondents agree and 32% respondents strongly agree with the statement that there is a chance to adopt unfair means like copying from any sources without documentation during the test. 11% respondents are neutral. 12% respondents disagree and 2% respondents strongly disagree with the statement. Moreover, majority of respondents think that there is a chance to adopt unfair means like copying from any sources without documentation during the test.

Figure 5: There is a chance to happen misleading evaluation due to automated scoring system.

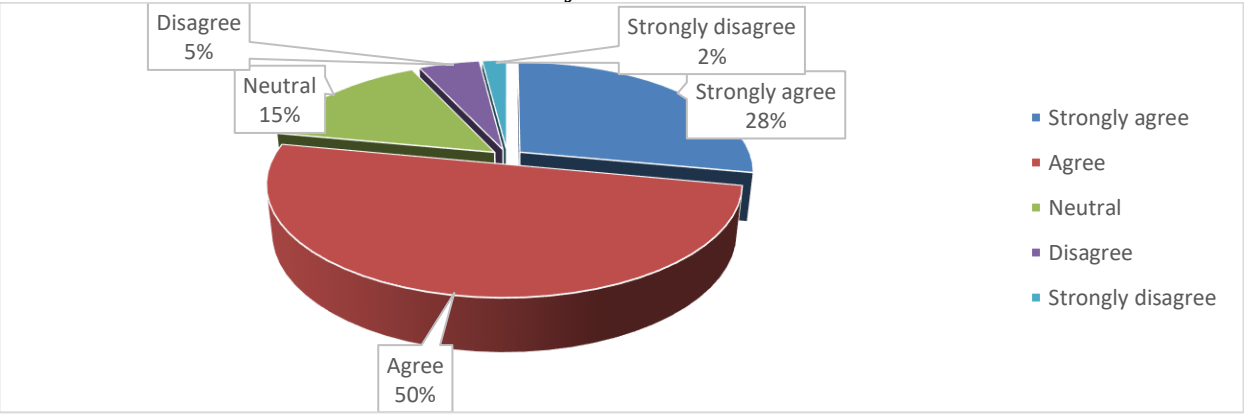

Figure5 shows that 50% respondents agree and 28% respondents strongly agree with the statement. It means they think that there is a chance to happen misleading evaluation due to automated scoring system. 28% respondents are neutral with the statement. 5% respondents disagree and 2% respondents strongly disagree with the statement. So, the result suggests that majority of the respondents face this misleading evaluation during CALT.

Figure 6: CALT is comfortable to all students.

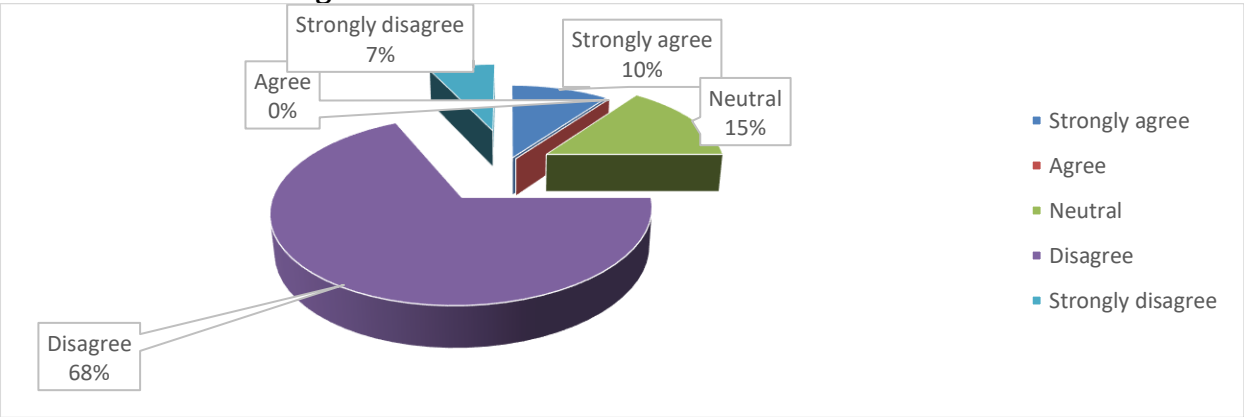

Figure6 shows that 10% respondents agree with this statement. It means 10% respondents feel comfortable with CALT. 15% respondents are neutral with the statement. 68% respondents disagree and 7% respondents strongly disagree with the statement. So, the result suggests that majority of the respondents are not comfortable with CALT.

Figure 7: CALT is easily accessible.

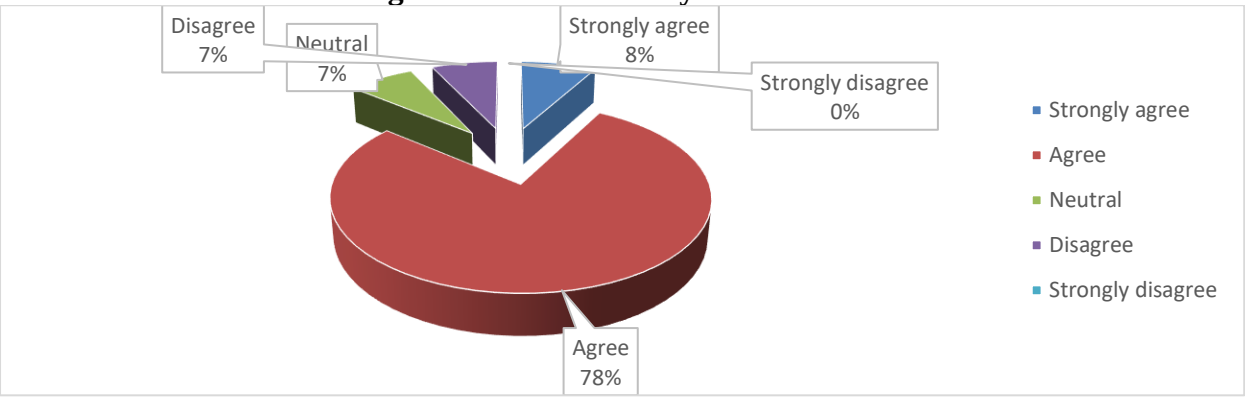

Figure7 shows that 78% respondents agree and 8% respondents strongly agree with the statement. 7% respondents are neutral with the statement. 7% respondents disagree with the statement. It means majority of the respondents think that CALT is easily accessible.

Figure 8: CALT is time saving.

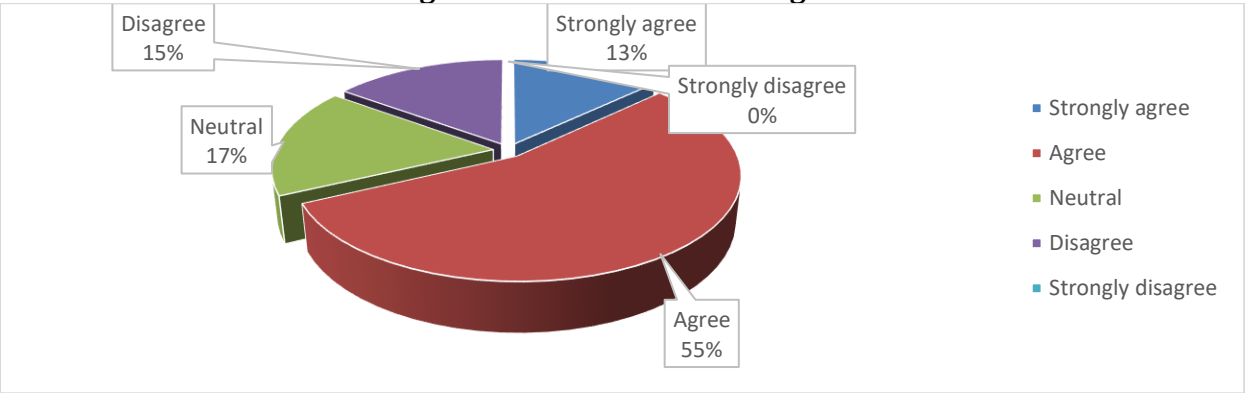

Figure8 shows that 55% respondents agree and 13% respondents strongly agree with the statement. It means they believe CALT is time saving. 17% respondents are neutral with the statement. 15% respondents disagree with the statement. So, the result suggests that CALT is time saving and it is its benefit.

Figure 9: It enhances students' communicative competence through speaking or oral test.

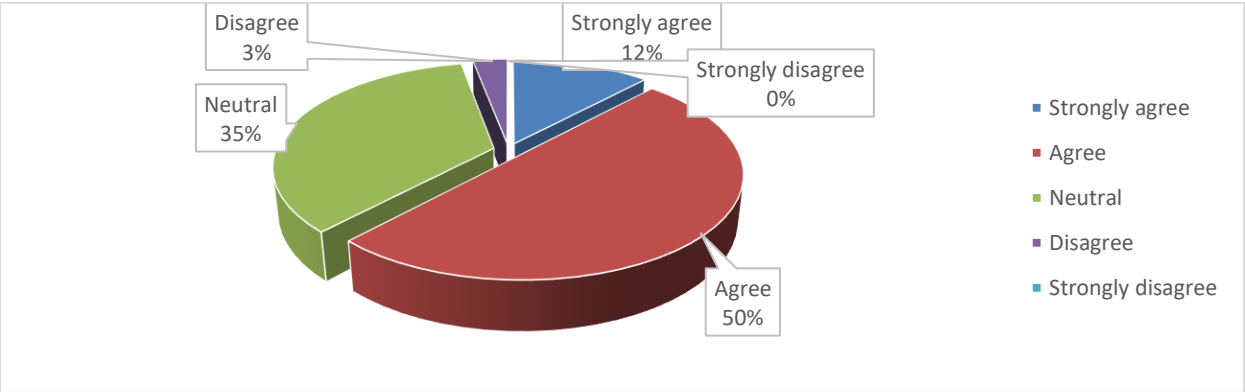

Figure9 shows that 50% respondents agree and 12% respondents strongly agree with the statement. It means they have been benefitted by CALT for enhancing their communicative competence. 35% respondents are neutral with the statement. 3% respondents disagree with the statement. The result says that majority of the respondents are benefitted by CALT for enhancing their communicative competence.

Figure 10: It makes the distant learning easier.

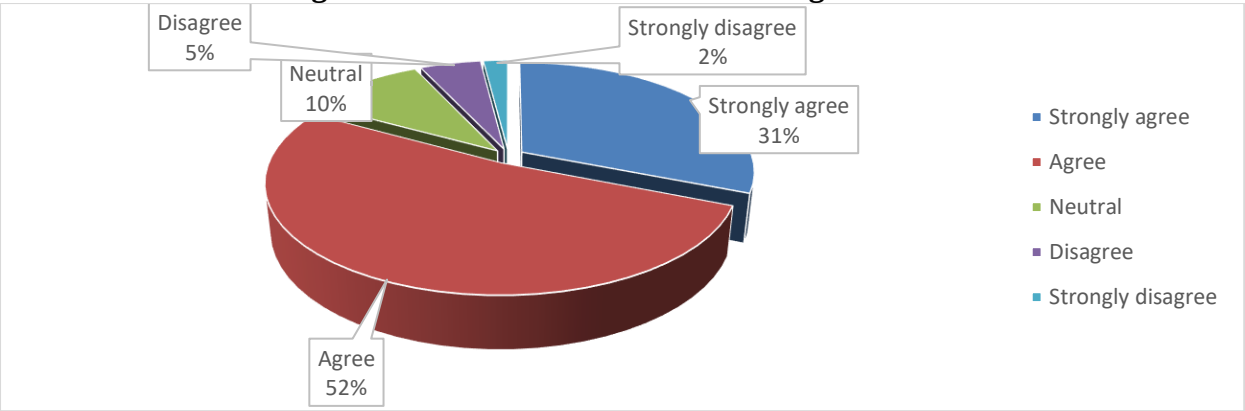

Figure10 shows that 52% respondents agree and 31% respondents strongly agree with the statement. It means they think that CALT makes distance learning easier. 10% respondents are neutral with the statement. 5% respondents disagree and 2% respondents strongly disagree with the statement. Ultimately the result suggests that majority of the respondents find that CALT is beneficial for them because it makes the distant learning easier.

Figure 11: It enriches students' technical expertise level.

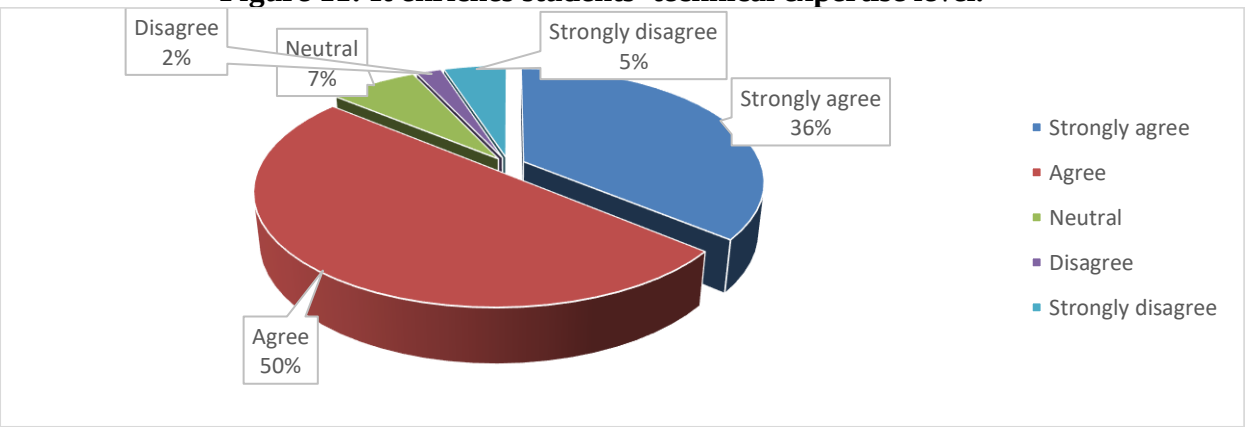

Figure11 shows that 50% respondents agree and 36% respondents strongly agree with the statement. It means they think that CALT enriches their technical expertise level. 7% respondents are neutral with the statement. 2% respondents disagree and 5% respondents strongly disagree with the statement. Ultimately the result suggests that majority of the respondents have benefitted by CALT for enriching their technical expertise level.

Figure 12: It is beneficial for students in case of ESP (English for Special Purpose).

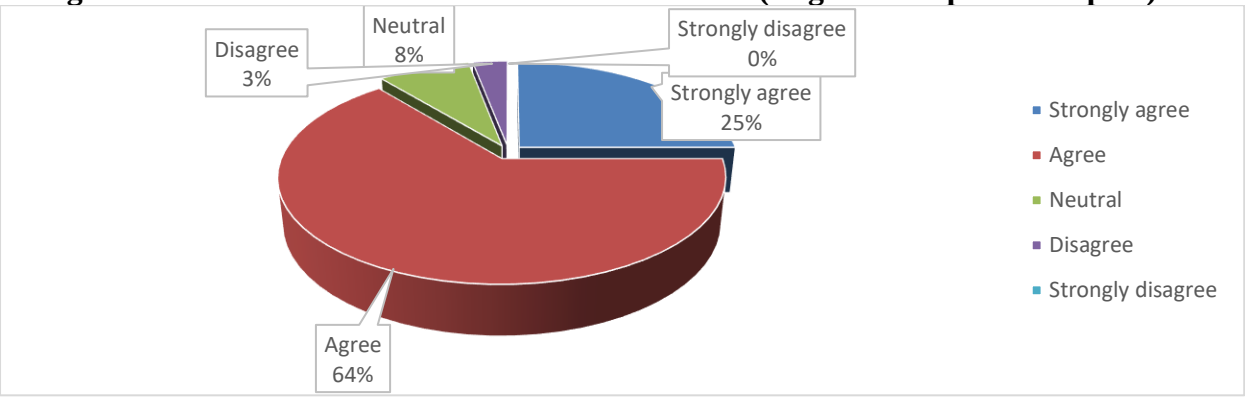

Figure12 shows that 64% respondents agree and 25% respondents strongly agree with the statement. It means they think that CALT is beneficial for them in case of ESP (English for Special Purpose). 8% respondents are neutral with the statement. 3% respondents disagree with the statement. Ultimately, the result suggests that majority of the respondents believe that CALT is beneficial for students in case of ESP (English for Special Purpose).

Figure 13: CALT provides rapid result of the test.

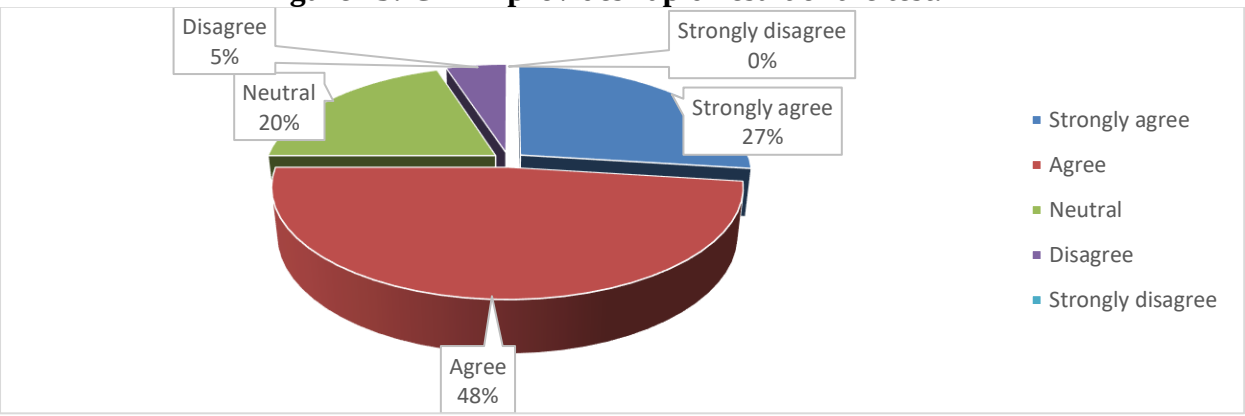

Figure13 shows that 48% respondents agree and 27% respondents strongly agree with the statement. It means they think that CALT provides rapid result of the test. 20% respondents are neutral with the statement. 5% respondents disagree with the statement. Ultimately the result suggests that majority of the respondents find that CALT provides rapid result of the test.

Figure 14: It provides bias-free test score.

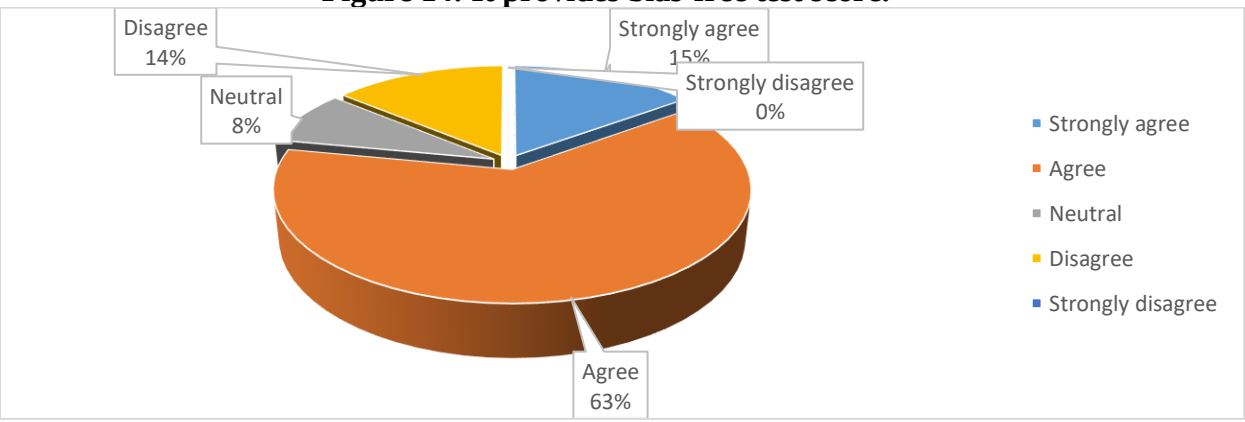

Figure14 shows that 32% respondents agree and 15% respondents strongly agree with the statement. It means they think that CALT provides bias-free test score. 33% respondents are neutral with the statement. 18% respondents disagree and 2% respondents strongly disagree with the statement. Ultimately the result suggests that majority of the respondents think that CALT maintains bias-free scoring system.

Findings from Teachers Survey Questionnaire

Figure 15: Availability of internet is a must.

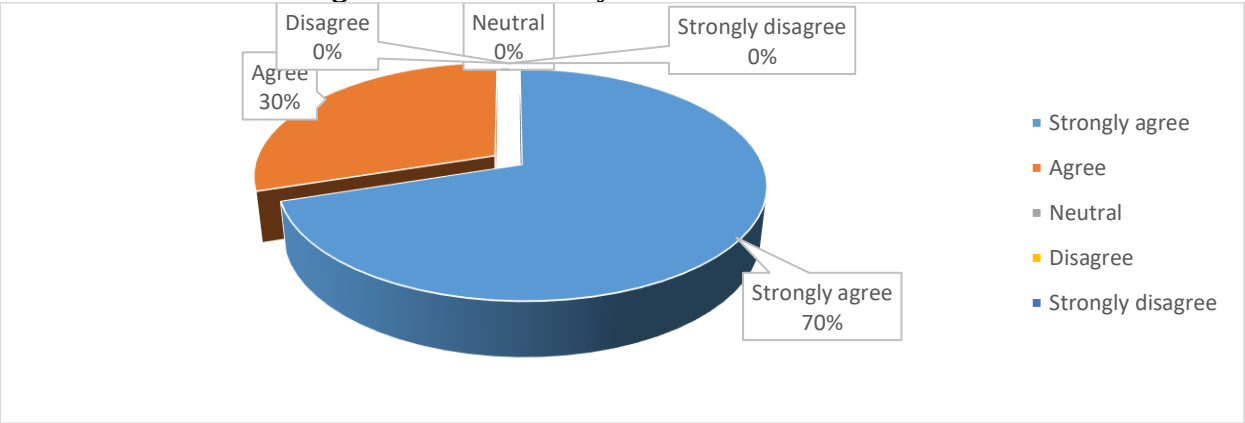

Figure15 shows that 30% respondents agree and 70% respondents strongly agree with the statement. No student denies with the statement. This data suggests that all teachers think that availability of internet is a must for CALT and no one denies this statement. It bears the testimony that it is the most acceptable problem by the students as well as teachers.

Figure 16: CALT is costlier than paper pencil-based test.

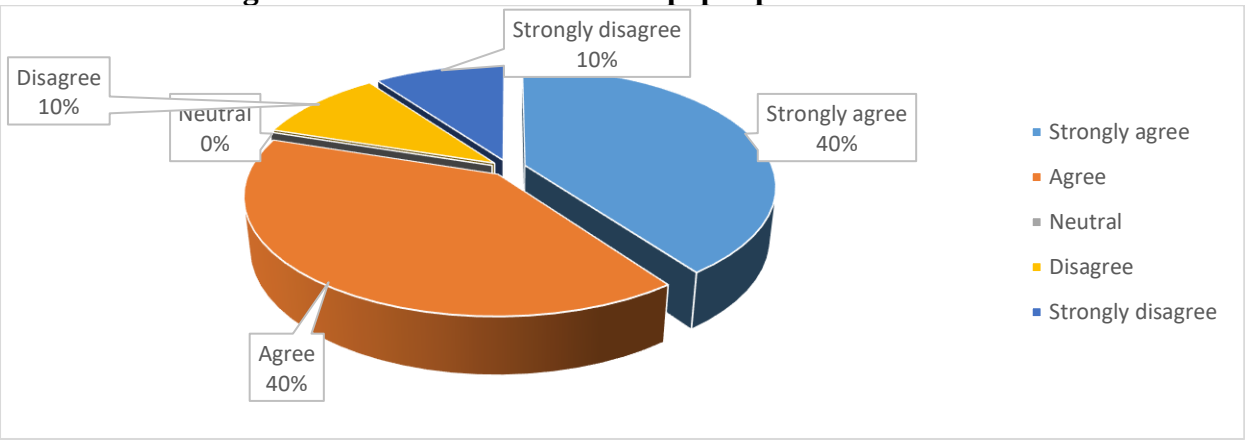

Figure16 shows that 80% respondents agree and strongly disagree with the statement. 20% respondents disagree and strongly disagree with the statement. This data suggests that majority of the teachers think that CALT is costlier than paper pencil-based test. It bears the testimony that it is the most acceptable problem by the students as well as teachers.

Figure 17: Students and teachers both face different types of technical problems during the test.

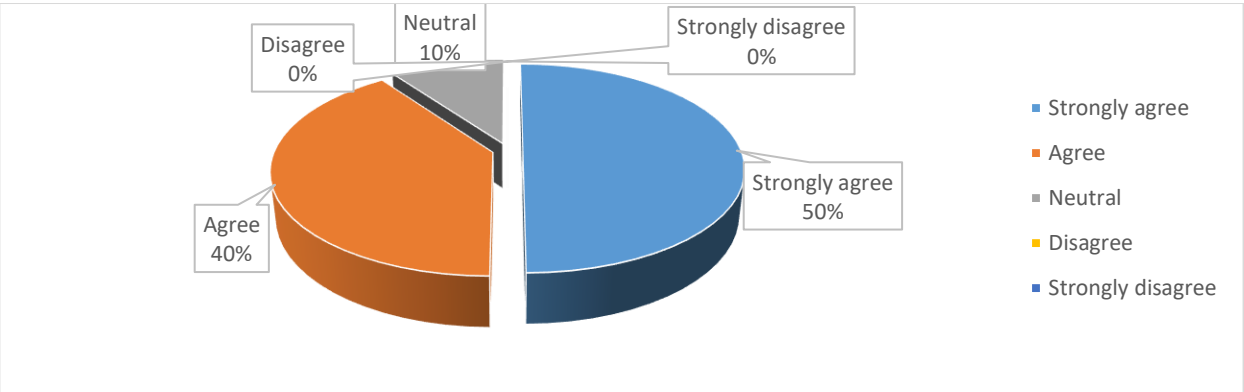

Figure17 shows that 90% respondents agree with the statement and no one denies the statement. This data suggests that all the teachers think that students and teachers both face different types of technical problems during the test. It bears the testimony that it is one of the most acceptable problems by the students as well as teachers.

Figure 18: CALT is comfortable to all teachers.

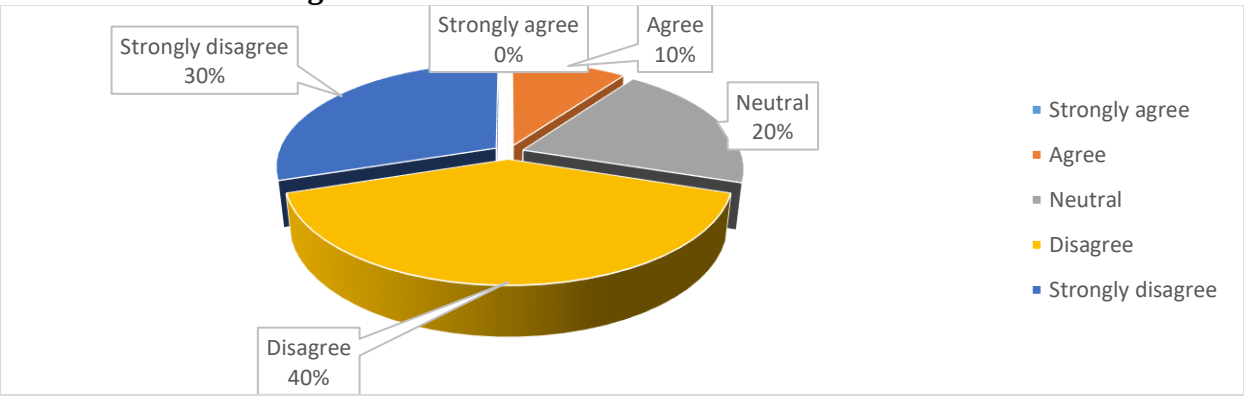

Figure18 shows that 70% respondents disagree and strongly disagree with the statement and no one accepts the statement. 20% are in a neutral position and 10% agree with the statement. This data suggests that majority of the teachers do not think that CALT is comfortable.

Figure 19: CALT is time saving.

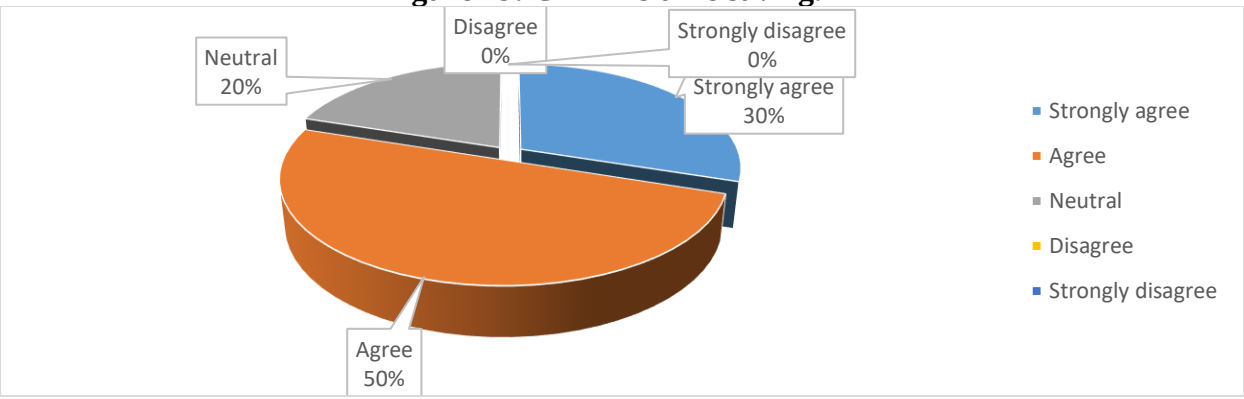

Figure19 shows that 80% respondents agree and strongly agree with the statement and 20% respondents are in neutral position. No one denies the statement. This data suggests that

majority of the teachers think that CALT is time saving. It bears the testimony that it is one of the most acceptable prospects by the teachers.

Figure 20: It enriches teachers' technical expertise level.

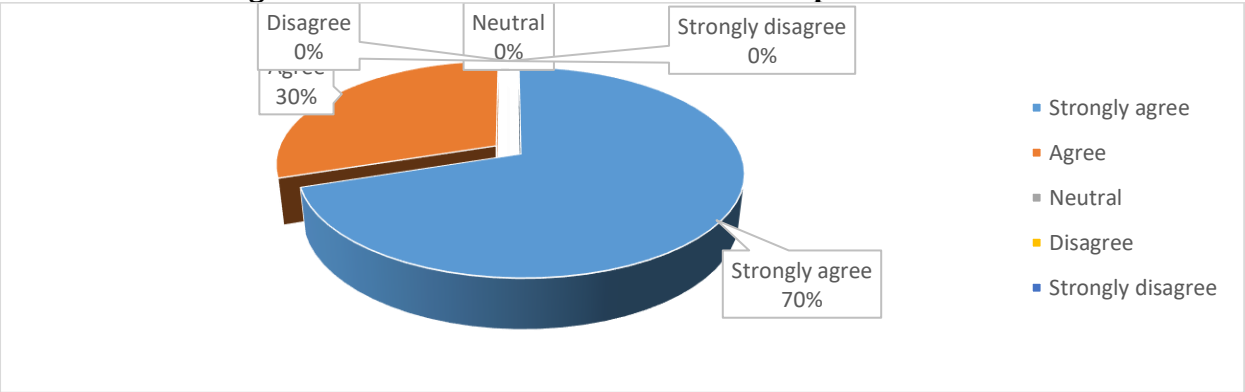

Figure20 shows that 100% respondents agree with the statement. No one denies the statement. This data suggests that all the teachers think that CALT enriches teachers' technical expertise level. It bears the testimony that it is one of the most acceptable prospects by the teachers.

Figure 21: It enhances students' as well as teachers' communicative competence.

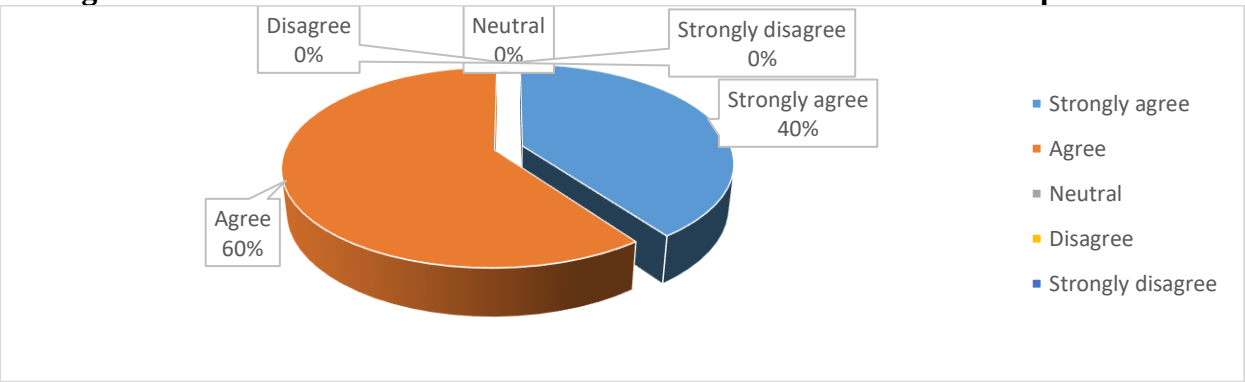

Figure21 shows that 100% respondents agree and strongly agree with the statement. No one denies the statement. This data suggests that all the teachers think that CALT enhances students' as well as teachers' communicative competence. It bears the testimony that it is one of the most acceptable prospects by the teachers.

Figure 22: CALT provides rapid result of the test.

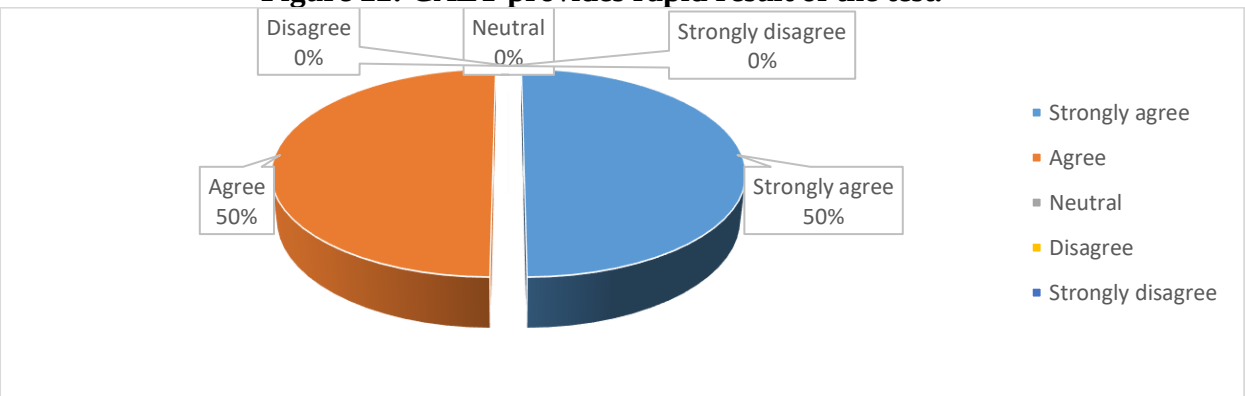

Figure22 shows that 100% respondents agree and strongly agree with the statement. No one denies the statement. This data suggests that all the teachers think that CALT provides rapid result of the test. It bears the testimony that it is the most acceptable prospects by the teachers.

Figure 23: It makes the distant learning easier.

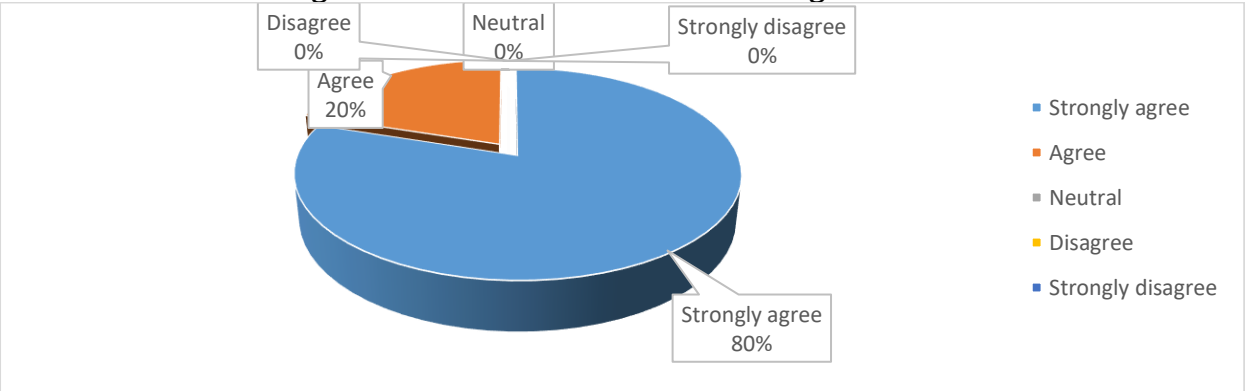

Figure23 shows that 100% respondents agree with the statement. No one denies the statement. This data suggests that all the teachers think that CALT makes the distant learning easier. It bears the testimony that it is the most acceptable prospects by the teachers.

VIII. DISCUSSION

Focusing on a complex relationship between teaching, testing, and the changing nature of CALT, this study raises important findings based on both the review of the literature and survey results. CALT has come up as a contemporary way of addressing traditional language testing techniques, occasioned by a need for better testing approaches. In view of Dutta &Smita (2020), CALT transforms the language assessments relevant to needs of present-day education and the advancement in technology. The switch from paper and pencil type tests to CALT is based on the advantage it holds of providing an individual and an on-the-spot results which is very useful for the both the student and the teacher.

The responses of students support literature findings that CALT is more accessible and less time consuming than traditional forms of learning. According to the results in figures 7 and 8, 78% of the students perceived that they could access CALT easily, while 55% appreciated that CALT had saved their time. These perceptions support Pathan's (2017) views that CALT provides a Florida and Pre-mastication volatile testing models that may help in environments where the traditional testing techniques are difficult. Further, the CALT of speaking tests also supports Chapelle and Voss's (2016) claim that technology is useful in making real-life communicative tests, which are important in language acquisition.

So, there is a similarity between the survey results and the reviewed literature. It reveals a number of deficiencies that would fit well into the following conceptual framework: Technical difficulties have emerged as the biggest problem, as 82% of the students and 90% of the teachers have opined that technical challenges are the major barrier to testing (Figures 3 and 17). These are consistent with Pathan (2017) and Chalhoub-Deville (2001) who have argued that the technological challenges that include instability of network and inaccurate automated scoring of the response work against CALT. Moreover, students have identified another drawback of automated scoring stating that such approach can mislead evaluations (Figure 5), similar to the concerns expressed in the literature about the reliability and fairness of automated systems; (Sawaki, 2001) for example, has compared computerized and paper-based tests.

Nevertheless, there are some black spots: As for the further perspective, undoubtedly, there are definite possibilities of ESP development at CALT (Figure 12) as well as its ability to enhance technical proficiencies (Figure 11). This comports with Chapelle's (2001) CALL which encapsulates the promise of technology in making learning real life, fun and learner centered. The evidence implies that despite those obvious benefits, there still exist certain technical issues and access problems which need to be discussed and solved in order to enhance the effectiveness of CALT.

IX. CONCLUSION & RECOMMENDATIONS

The incorporation of CALT in language assessment complies with the contemporary approach to teaching and learning; this approach has further advantages than complications. The current research offers new perspectives describing the existing practices of students and teachers in CALL environments and it is important in illustrating the prerequisites for successfully implemented supported CALL testing to entail the full potential of CALT in variety of contexts. Based on the findings and discussions, a number of recommendations have been given by the researcher to overcome the problems regarding the use of CALT and make it more beneficial for the students. These are:

I. Students should be provided with proper training regarding the use of educational technology by the institution and the teachers.
II. Authority should arrange sufficient teacher training sessions regarding CALT and other respective issues.
III. Authenticity of the assessment system should be ensured by examination management committee.
IV. Easy and budget-friendly internet support should be ensured for the students.

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