A study on Technology Enabled Assessment in Higher Education

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ARTICLE DETAILS	ABSTRACT
Research Paper **Keywords:** *Technology-Enabled Assessment, emerging technological tools, feedback.* **DOI;** **10.5281/zenodo.14328605**	This research aims to study the nature, and types of Technology Enabled Assessment (TEA), explore emerging technological means and tools for conducting TEA, investigate the issues involved in TEA strategies, and propose solutions to address these challenges. Purposive sampling was employed, and data were collected through interviews with ten teachers from various higher education institutions in Assam, India. The findings of the study reveal that most institutions did not have specific guidelines or policies for technology-enabled assessment, indicating a lack of standardized practices. Moreover, technology was found to assess knowledge and competencies differently compared to traditional paper and pen tests, suggesting a limited scope of TEA at present. The emerging tools have brought significant changes to the assessment process, including the adoption of video conferencing, multiple-choice questions, and submission of assessments through platforms like Google Forms. Regarding feedback provision, teachers commonly used tools such as Google Classroom, Google Meet, and WhatsApp, while some showed less interest in providing feedback. Plagiarism detection tools were not extensively utilized, resulting in challenges related to academic dishonesty. Teachers and students faced difficulties in adapting to technological tools, citing unfamiliarity and network issues as common problems. The limited capacity of TEA to assess comprehensive knowledge and skills posed a challenge for its implementation. Furthermore, the exposure to technological tools for

an extended duration was perceived to have health-related issues, including headaches, eye strain, and loss of concentration. Lack of technological infrastructure support emerged as a significant barrier to TEA implementation. To enhance the effectiveness of TEA, the study recommends providing proper orientation and training to both teachers and students, fostering collaboration between them, making TEA an integral part of the assessment process, and promoting regular use and practice of technology-enabled assessment tools.

INTRODUCTION

As the population of student and their learning engagements become more and more diversed and the class size grows more, the using of assessment strategies for the promotion and determining the student's achievement becomes far more increasingly challenging.

Technology has always been seen as essential element in meeting the challenge of assessment. Technology enabled assessment (TEA) can be seen as a meeting place for digital learning as well as assessment for learning as well. TEA is such an area that is rich with opportunity, but is also full of risks. Achieving the road to success while also avoiding failure has been a key mandate for the members of university communities, right from teaching staff to the senior leadership.

CONCEPT AND SCOPE OF TECHNOLOGY ENABLED ASSESSMENT (TEA)

Technology Enabled Assessment (TEA) is a very broad term that tries to encompasses the diversified methods by which the technology can be used purposively in order to support the management, conducting and delivery of assessment. TEA does not only mean simply replacing the existing assessment systems with the digital versions, but making use of technology to tackle and solve effectively some of the operational and the pedagogic issues of the assessment process. TEA is by no means therefore only a magic bullet, but rather it is one method of supporting the pedagogy of teaching learning and the best practice relating to the process of assessment.

The Using of digital technology in this era within assessment (also known as 'e-assessment' or 'technology- enabled assessment') is not a totally new technological introduction to education. While the terms like 'e-assessment' or technology enabled assessment means many varieties of

things to differing types of individuals, they typically refer here to any reasonably use of any digital technology for the aim of formal educational assessment process. during a particular one form or

another, technology enabled assessment (or basically e- assessment) has been around for about twenty years now. Throughout the lifetime , the students have always suggested that it offers traditional assessment varieties of practices that are potential catalysts for the change and responds to the growing assessment challenges.

RATIONALE OF THE STUDY

Technology enabled assessment has been a off late a very important concept in the whole process of evaluation and assessment. Many of the educational institutions are adopting this technique for effective and efficient formative as well as summative assessment. Because of the concept of immediate feedback in TEA, it has a very increasing demand. This kind of assessment is gaining more popularity specially after the covid 19 pandemic. Because of many of the merits and advantages, the teachers and practitioners are very quickly adopting and practicing this technique. Since there is not much knowledge about this form of assessment in the teachers as well as students, so there is a great need of this study so that the personal experiences of the teachers while using TEA are studied and also to find the flaws that are there in this form of assessment. This study has a great significance as it will try to gather appropriate suggestions of what can be further done in order to increase the efficiency and effectiveness of this form of assessment to and try to make it an integral part of the whole assessment process in the education institutions.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:-

1) To study the nature, objectives & types of Technology Enabled Assessment (TEA) .

2) To study the emerging technological means and tools to conduct Technology Enabled Assessment (TEA).

3) To study the issues involved in Technology enabled Assessment Strategies (TEA).

4) To find appropriate solutions and suggestions in order to solve issues related to Technology Enabled Assessment (TEA).

RESEARCH METHODOLOGY

The method of study that the researchers have adopted is the Descriptive Survey Type of Study which is a Qualitative Study in nature. In this research study, it is the Descriptive survey method which has been used by the researchers. For the present study, under the survey method , the researchers have used the

interview method for the collection of data. The interview is a process of communication or interaction in which the subject or the interview gives the needed information verbally in a face to face situation. The researchers are going to take the interview of teachers and hence the teacher of Higher Education , that is teachers of various departments of Higher Education Institutions such as colleges, autonomous colleges and Universities situated in the state of Assam are considered as the population of the study. In the present study, the researchers have used Purposive Sampling which is a method of Non - Probability Sampling. In this study, 10 teachers of higher education system of various departments of Colleges, Autonomous colleges and Universities of Assam are taken as the sample.The researchers have used Purposive sampling method. For the present study the researchers have used interview as a tool to collect data from the samples. For the present, study the researcher has used interview method to collect the data. The researchers have constructed a list of questions to held the interview where simple language is used in English. The questions where constructed according to the objectives, each objectives has a particular set of questions keeping in mind the main and purpose of the objectives.

COLLECTION OF DATA

The collection of data was done by the researcher with the help of the interview schedule which was done on the teachers of Higher Education , where mostly telephonic interview was done to collect the data in the form of their views and opinions from the teachers , since the teachers of various colleges , University and autonomous colleges where selected to collect data they belong to different parts of the state of Assam which is why mostly telephonic interview was the only option to collect data by the researcher because there was a limited time and limited scope for the researcher.

ANALYSIS OF THE 1ST OBJECTIVE

To study the nature, objectives & types of technology enabled assessment. (TEA).

The responses to the questions under this objective are –

1. Is there any set of policy, guidelines, instructions developed by your institution for technology enabled assessment (TEA)?

In the interviews that were taken by the researcher, it was found that 70% of the Teachers responded that there were no fixed set of policy, guidelines, instructions that were developed by their institutions for TEA. And according to the rest 30% of the teachers there were some set of rules and regulations.
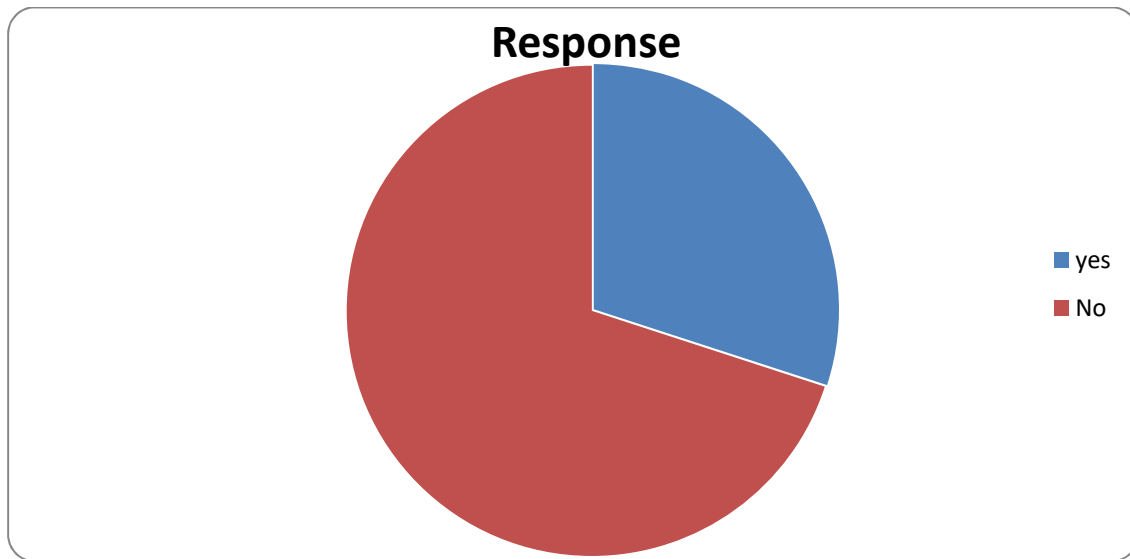
Response

So it is clear from the responses that most of the institutions that the teachers belong have not set any fixed or hard and fast rules and a few of them have set just general rules regarding the time limit and submission of papers of the examinations.

2. Does technology assess the same knowledge and competencies that paper pen

test assess ?

In the interviews that were taken by the researcher it was found that 90% of the teachers responded that Technology do not access the same knowledge and competencies that paper pen test asses. Only 10% of the teachers agree with the fact that Technology assess the same knowledge and competencies that paper pen test assess. Only 10% of the teachers agree with the fact that Technology assess the same knowledge and competencies that paper pen test assess. So it is quite clear from the responses that most of the teachers feel that Technology cannot access the same knowledge and competencies that pain paper test ass and their is differences between them. It is also clear from their words that Technology enable assessment has a limited scope when it comes to assessing knowledge and the domain of skills so it cannot be compared with the pen and paper test.

3. What role does emerging tools play in managing and conducting the process

of assessment?

In the interviews that were taken by the researcher 70% of the teachers responded positively to this
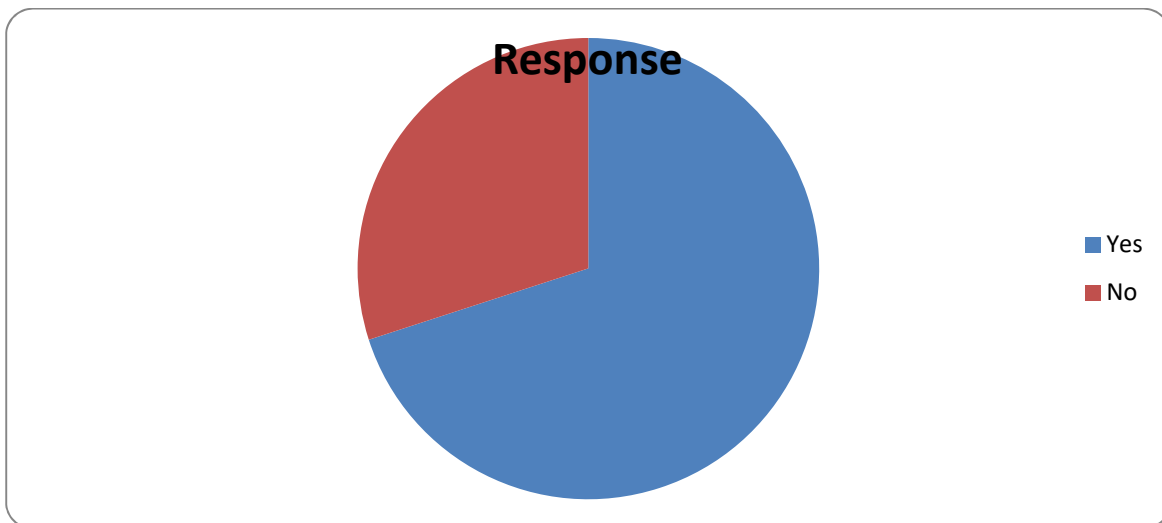

Response

- Yes
- No
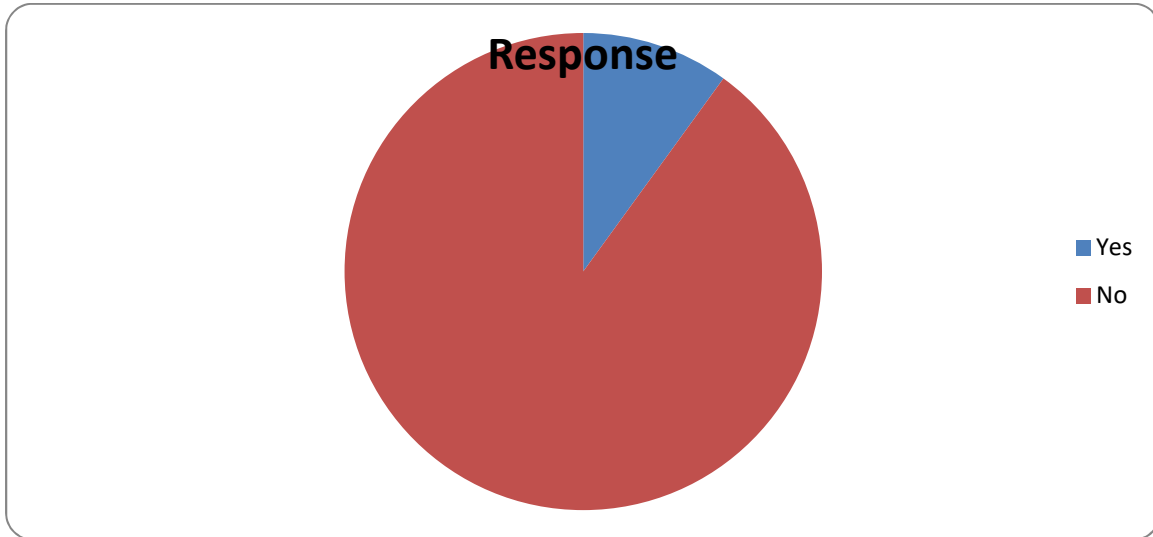
question positively. For most of them emerging tools does play a role in managing and conducting the process of assessment, most of them said that it makes the process less time consuming and it is also easier to correct the answer scripts and give feedback in less time. So from the responses it is clear the fact that the teachers feel that imagine Technology tools do play a great role in managing and conducting the process of assessment as it is flexible in terms of the time and geographical location and also it makes the assessment process more convenient and easy to handle for the Teachers.


Response

- Yes
- No
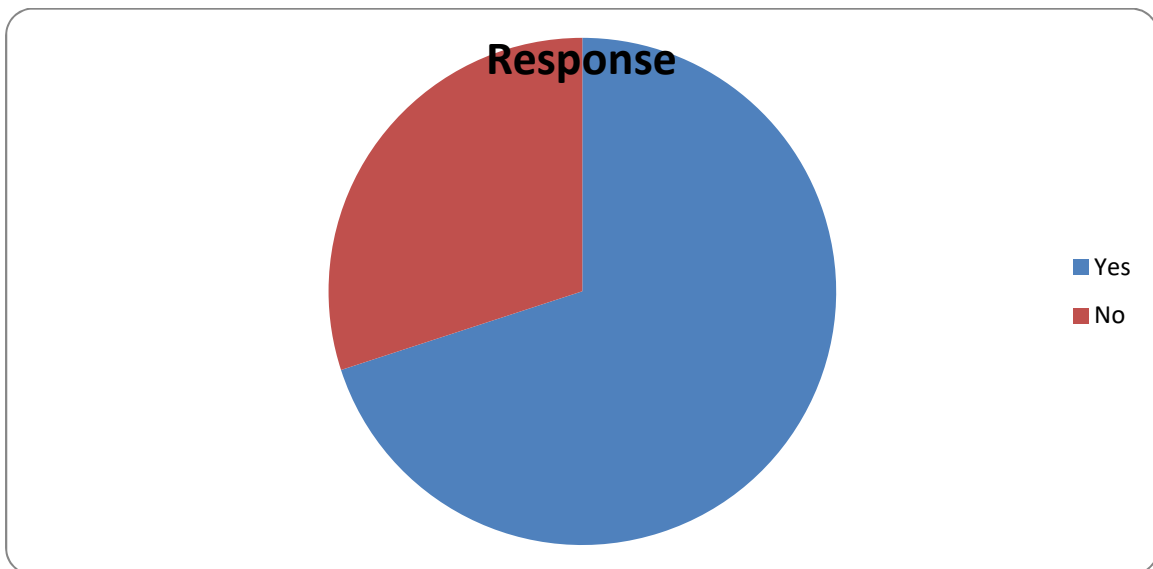
4. What major changes happened in the process of assessment, assessment pattern and in the nature of assessment due to introduction of emerging technology?

In the interviews that were taken by the researcher 70% of the teachers felt that some changes have happened in the process of assessment and assessment pattern and in the nature of assessment due to the introduction of emerging tools in the process of assessment. A few teachers find that the assessment process has become less time consuming and more easy to conduct because of the introduction of Technology in the assessment process. So the basic points that can be seen from the responses is that the wastage of materials such as paper is minimal in technology enable assessment and also it is a very flexible system as in keeps the teachers and students to be and their comfort zone during their assessment and also regular monitoring of students can be done and a track record can be kept of their progress.

5. What are the different technology enabled types and forms of assessment implemented in your department/ institution?

In the interview that were taken by the researcher almost 60% of the teachers responded to this question. Most of the answers were based on forms of assessment like video conferencing and Google forms that are based on multiple choice questions. It is clear from the responses of the teachers that the most common form of assessment that is done with the help of technology is multiple choice questions to google forms and also video conferencing and submission of answer speed through google classroom. Till now not many complex systems of technology has been introduced in the educational system today.

Responses

Legend:
- ■ Responded
- ■ No response
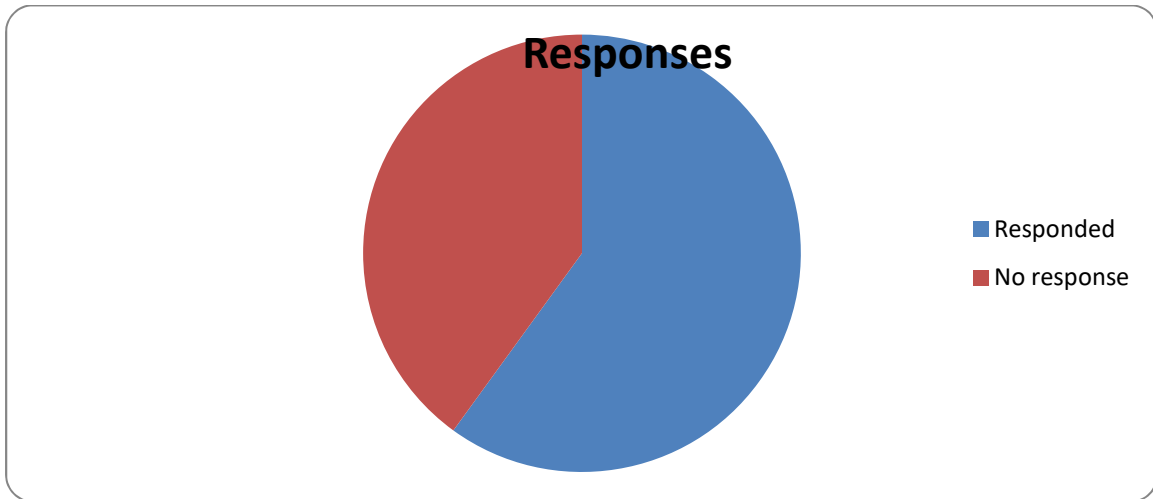
ANALYSIS OF THE 2ND OBJECTIVE

To study the emerging technological means and tools to conduct TEA.

1. What tools and platforms can be used for TEA both for formative and summative evaluation?

From the interviews that were taken by the researcher it was found that most of the teachers responses where almost common regarding the tools and platforms that are used for technology enable assessment. Some of the common tools that were mentioned are tools like Google meet, Google classroom ,Google forms, WhatsApp, zoom meeting etc. So it was found from the responses that not high level applications tools or softwares are used for technology enable assessment in the present times mostly common devices that are mentioned such as Google meet, Google classroom ,Google forms ,WhatsApp and zoom meeting are mostly used for technology enable assessment in the education Institutions nowadays.

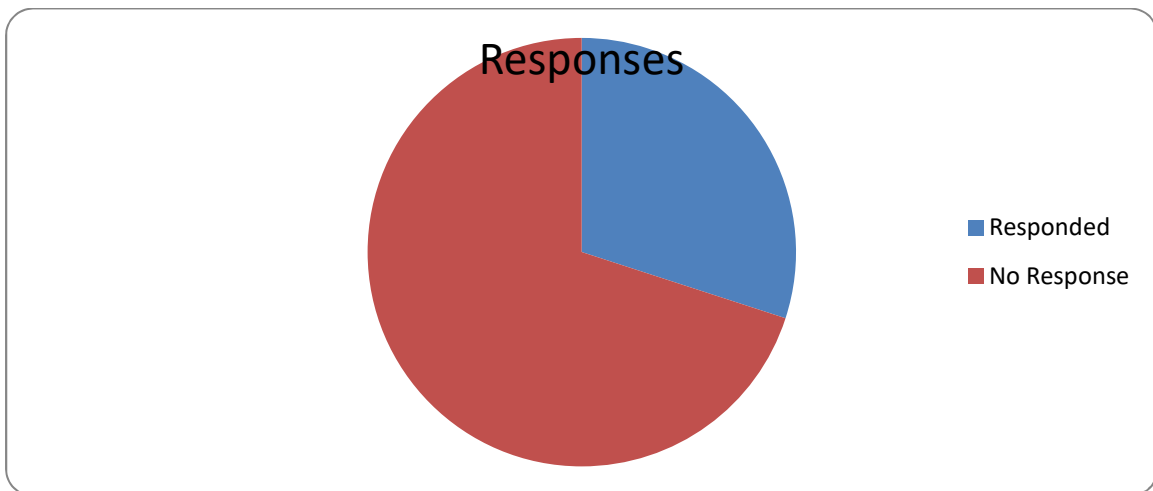2. What technological tools, platforms do you use to provide feedback to students?

From the interviews the researcher found that only 60% of the teachers responded to this question. According to them that tools that they used to prepare feedback to students are Google classroom, WhatsApp and also Google meet. So from the responses it is found that not many teachers are aware or bothered about the feedback that they give to students after the online assessment or Technology

enable assessment and only if you respondent to this question and the most common blood forms or tools that they use for giving feedback to students are mostly Google classroom WhatsApp.

Response

- Responded
- No response
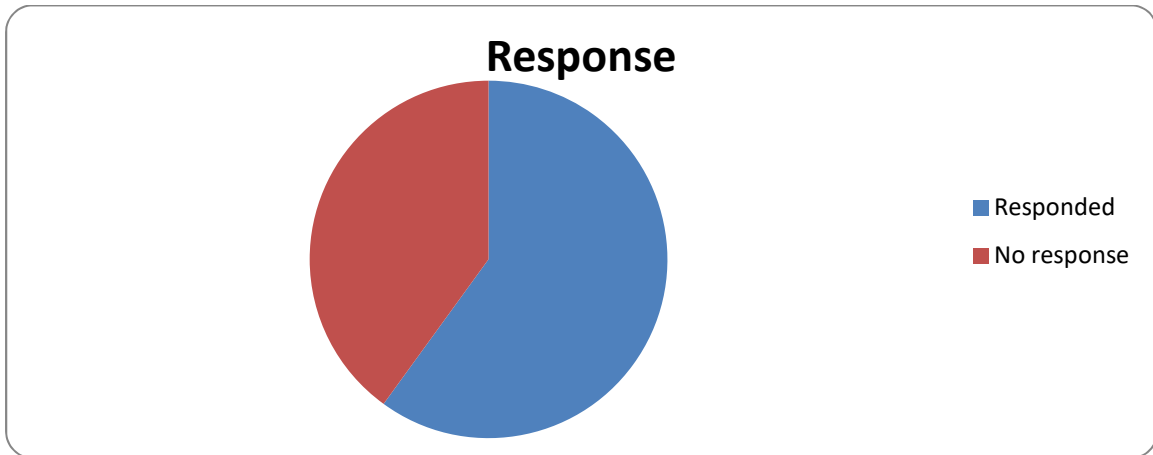
3) Are you able to use any technological tools to monitor how students progress based on feedback? If yes, can you name some tools.
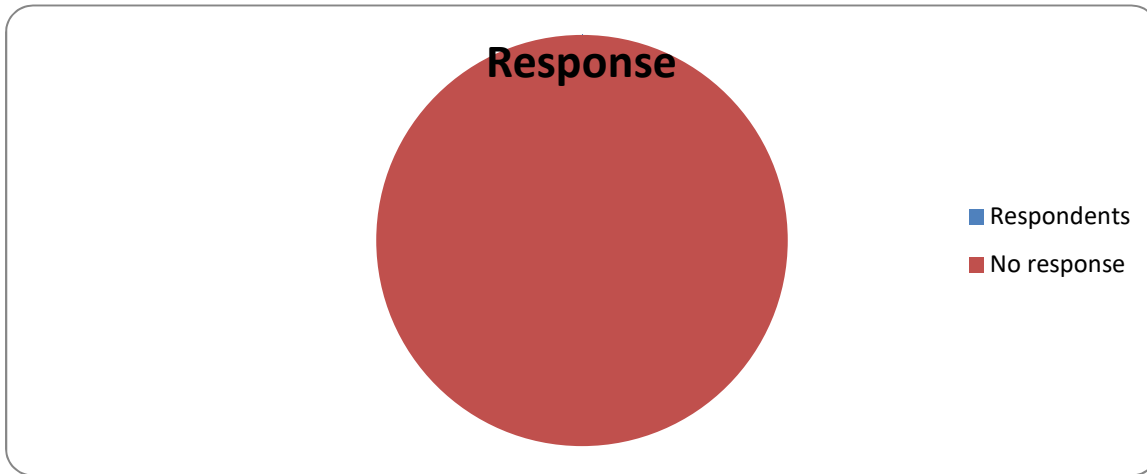
From the interviews that were taken by the researcher it was found that only 30% of the teachers responded to this question. It was found that the tool that teacher use for monitoring students progress based on the feedback is primarily Google classroom and also WhatsApp. So it is clear that most of the teachers are not interested about the monitoring of the progress based on the feedback that are provided to students and the few teachers who responded to this question mention that the only tools that they use for monitoring students progress based on feedback are mostly in Google classroom and WhatsApp.

Responses

- Responded
- No Response

4) What technological tools do you use to detect the plagiarism among students?

From the interviews that were taken by the researcher it was found that none of the teachers responded to this question that is that Technology tools that they used to detect Plagiarism among the students. So it is clear from the responses that none of the teacher are very much bother or interested to check the

pleasure that is related to the technology enable assessment system and none of the teachers are very much interested to know about the extent of cheating or copying that is going on among the students while they are attempting Technology enable assessments.


ANALYSIS OF THE 3RD OBJECTIVE

To study the issues involved in TEA strategies.

1) What are the main problems one face in using Technology enabled assessment?

From the interview that are taken by the researcher it was found that 80% of the teachers responded to this question. Few of the teachers responded that the main problem that the feel regarding the technology enable assessment is using of electronic tools and also that not everyone is adapted with its usage. So from the responses it is found that some of the main problems that teachers feel regarding the technology enable assessment systems are that the teachers and students are not familiar and adapted using the technology while assessment and also that in regular usage it becomes a huge problem because of network issues and also Technology scene while using Technology.
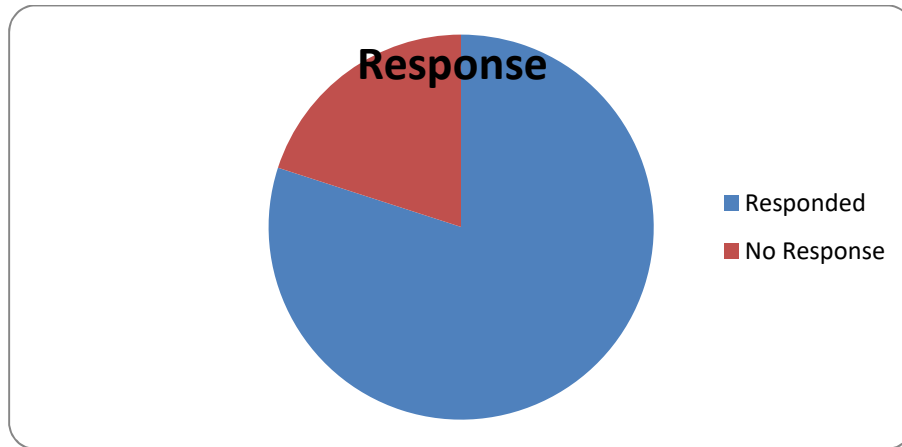
Response

2) Do you find it challenging that TEA assess only the limited categories of knowledge and skills?
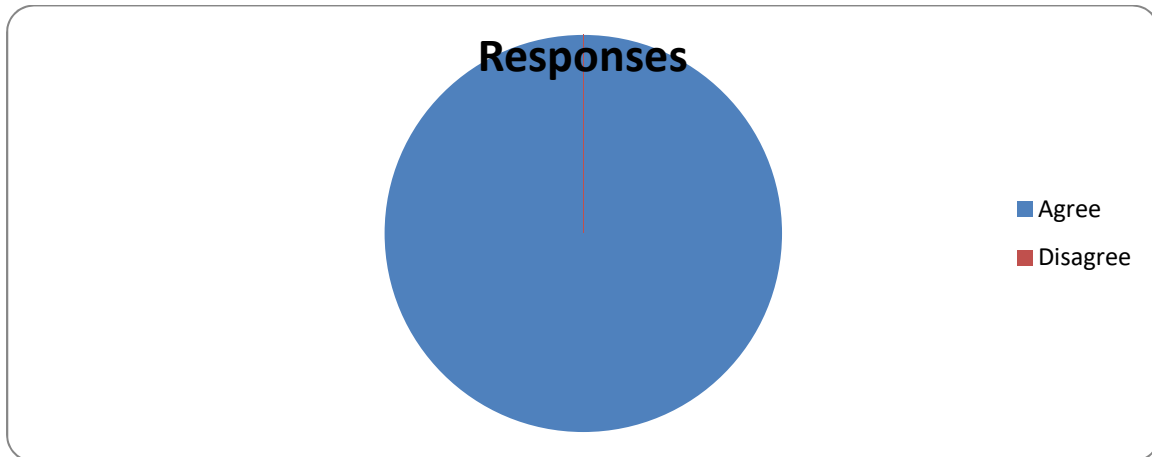
From the interviews that are taken by the researcher it was found that 90% of the teachers responded in support of this question that they find it challenging while using the technology enable assessment because it asses only limited categories of knowledge and skills. So it is quite clear from the responses that most of the teachers feel that Technology cannot access the same knowledge and competencies that pain paper test ass and their is differences between them. It is also clear from their words that Technology enable assessment has a limited scope when it comes to assessing knowledge and the domain of skills so it cannot be compared with the pen and paper test.

Response
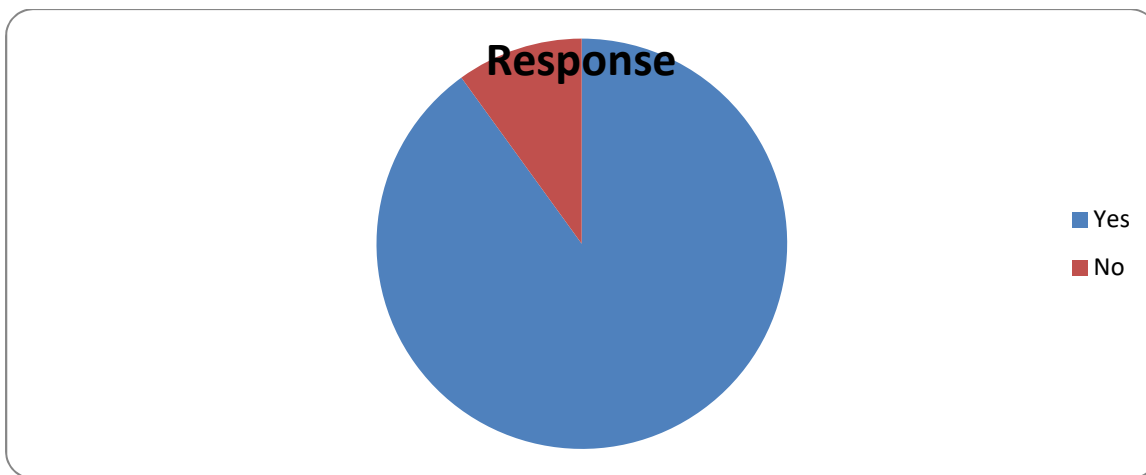
3. Do you think that large exposure to TEA may lead to health related issue?

From the interviews taken by the researcher it was found that every teachers that is 100% of the teachers agreed with the fact that large exposures to Technology enable assessment might lead to health related issues. So it is quite clear from the responses that every teacher agreed with the fact that Technology

enable assessment if used on a bigger basis can cause health related problems such as it can cause headaches it might cause eye sight problems and it might also cause concentration power loss so that teachers agree with the fact that Technology enable assessment should be used in a limited manner.

Responses

4. Do you think that lack of technological infrastructural support will be a barrier for TEA?
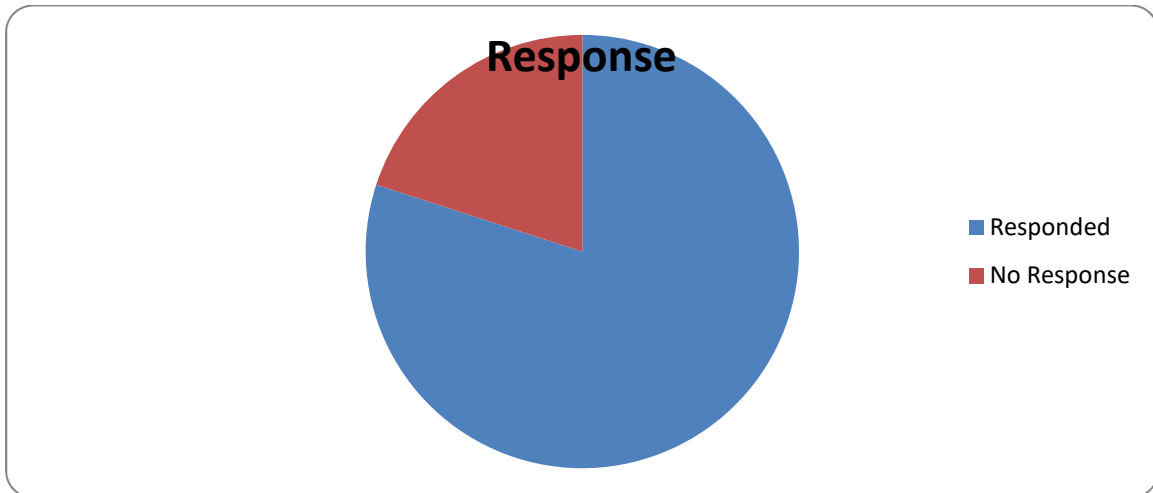
From the interviews taken by the researcher it was found that every teachers that is 100% of the teachers responded positively to the question that lack of Technology infrastructure support will be a great barrier for technology enable assessment. Every teacher feels that Technology infrastructural deficiency can hamper Technology enabled assessment to a large extend. From the responses of the teachers it is clear that each and every teacher agrees with the fact that Technology can enabled assessment cannot be caring out if there is lack of Technology infrastructure in any institution or department and it is the prerequisite of caring out Technology enable assessment and an institution must be well equipped with technology and hence the lack of it will be a huge barrier or a big problem to carry out Technology enable assessment.

ANALYSIS OF THE 4THOBJECTIVE

1. What suggestion do you offer to make TEA more effective?

From the interviews that are being taken by the researcher it was found that almost 80% of the teachers responded to this question. Most of them where of the opinion that proper orientation on technology enable assessment and then sharing it to all levels of education and also to higher education is required and also the teachers and students must collaborately learn how to use Technology enabled assessment more effectively and also that the teachers and professors of any educational institution should be

properly trained in using of this kind of assessment where technology is used. It is clear from the responses of the teachers that most of them are bothered about the training that are being given to the teachers and the students about how to use Technology while assessment.

Response

2. What steps can be taken according to you to make it an efficient an integral part of the assessment process?

From the interviews taken by the researcher it was found that 60% of the teachers responded to this question. Some of the suggestions that they gave to make Technology enable assessment and efficient and integral part of the assessment process is that it should be used in a regular basis and a regular practice is required on the part of both the teachers and the students and the school or institution should acquire and take necessary steps to make available all the technology tools for the teachers and the students. That's it is clear from the responses of the teachers that Technology enable assessment can be made an efficient and integral part of the assessment process by regularly using it in educational institutions and educating the students about this type of assessment the benefits of this kinds of assessment and also regular practice is required on the parts of the teachers.
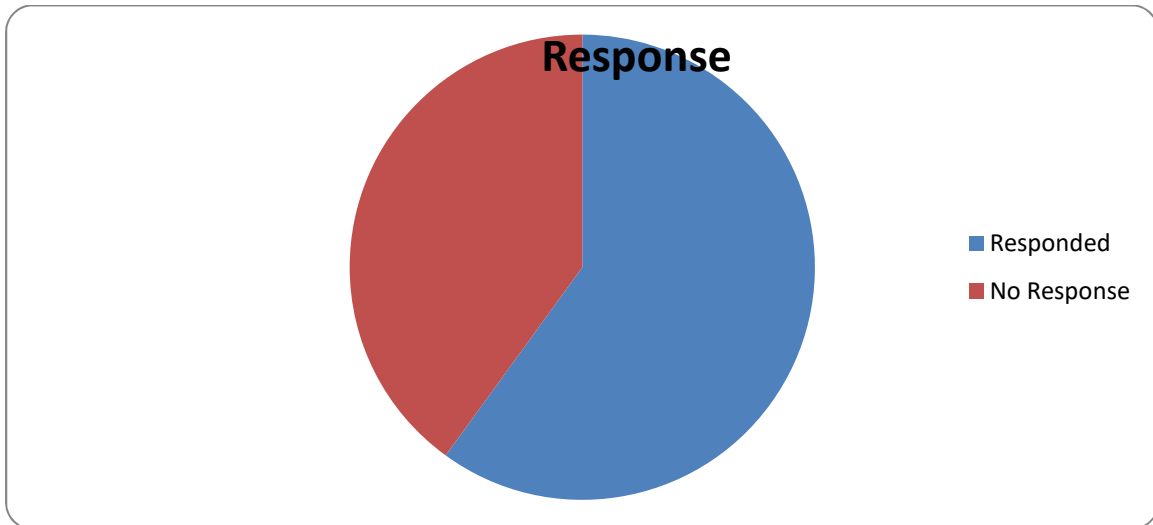
CONCLUSION

The educational system has come a great distance from generations to generations. Today the modern world demands more and more in terms of Technology. Education in the 21st century doesn't stay the same, so is the assessment process , since Technology has come , it also has its influence on the educational process and the Technology also has its role on the assessment process. The role of Technology can work as a game changer in the process of education and assessment , educational system cannot ignore or avoid the technological advances of the modern world influence of education in the lives of human beings . Technology has made his way to the education process, evaluation and assessment is a process that is the integral part of any education process, knowledge started to be an important part in the process of assessment, therefore with the evolving Technology ,the assessment in the educational system not ignored of Technology in the assessment process, a lot of curiosity is there among the minds of the people regarding the role of technology that can be played in the assessment process. There are many advantages, merit and at the same time there can be many demerits and things which are not favourable for the assessment process as far as the technology is considered.

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