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Assessment Literacy, Current Assessment Practices and Future Training: Reflections of Teachers in Higher Education

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Abstract. The aim of this study is to explore assessment literacy, to analyse the current assessment practices of teachers in Higher Education (HE) and to understand the need for alternative assessment practices in light of teachers' reflections. The research employed incidental sampling to select (n=58) HE teachers from a single multidisciplinary university in Maharashtra State, India. A comprehensive literature review on assessment literacy provided the theoretical foundation, and a specialized assessment tool was developed to assess the teachers' assessment literacy level, perspectives, and practices in assessment. Data were collected through voluntary participation and analysed using quantitative and qualitative techniques. The findings revealed that the majority of HE teachers (79%) demonstrated a moderate level of assessment literacy, while 16% exhibited low levels and only 5% showed high levels. Additionally, a discrepancy was observed between the preferred assessment types of teachers and learners, with learners emphasizing active participation and real-world applications, while teachers leaned toward traditional evaluation methods. Participants were found to be literate only in specific aspects such as meaning, basic forms of assessments, and the purpose of educational assessments. Furthermore, teachers minimally acknowledge and have a lesser preference for alternative assessment methods, such as article analysis, team projects, case studies, and discussions. Overall findings indicate teachers' lack of

knowledge about assessment practices that involve evaluating student performance, fostering collaboration, assessing higher-order thinking skills, and utilizing assessment as a tool for learning and improvement. This research confirms the need for training to enhance teachers' assessment literacy, promoting the adoption of alternative assessment practices in higher education to optimize student learning experiences.

Keywords: Assessment literacy; Current assessment practices; Alternative assessments; Higher education teachers

1. Introduction

Assessment is crucial in our rank-dominated system but also leads to high dropout rates in higher education (HE). Effective assessment practices can help to identify and address the factors contributing to dropout rates such as learning difficulties, lower engagement, or inadequate support. By understanding students' learning needs and progress through assessment, educational institutions can implement targeted and timely interventions and personalized support to improve retention rates, thereby ensuring the success of all learners. India's Higher Education (HE) sector is critical in meeting the needs of its vast youth population, which exceeds 38.5 million. The National Education Policy, 2020 (NEP 2020), set a target to increase the HE Gross Enrollment Ratio (GER) from 26.3% in 2018 to 50% by 2035. This expansion is expected to be facilitated by the adoption of Open and Distance Learning methods. Furthermore, the NEP 2020 is committed to offering high-quality higher education, with equity and inclusion. However, reports reveal enormous student dropout rates between the secondary stage and higher education (Ministry of Human Resource Development, 2016).

The constructivist approach to assessments emphasizes that 'learners are the constructors of their knowledge.' It promotes student initiative, self-discipline, and choice. Furthermore, it encourages learner engagement and provides ample opportunities for students to express their learning through preferred assessment tasks. Alternative assessments require responsive instruction, allowing teachers to make use of learners' abilities to improve the quality of learning.

Reports have shown that there is an enormous student dropout rate from secondary stage onwards, extending to higher education (MHRD report, 2016). When it comes to educational assessment, the stakes are very high, since it determines students' individual learning and sways development at the macro level. Therefore, assessment standards must be carefully determined in terms of quality enhancement, rather than relying upon the instinctive judgment of teachers. To achieve this, assessment literacy must be given due importance in teachers' professional development. However, the question remains whether the current assessment practices effectively indicate learners' skill levels or whether they are merely a tool for testing the learners' memories.

Underachievement in assessments could be a significant factor in inducing dropout (Can et al., 2017; Paura & Arhipova, 2014). In this vein, the NEP 2020 states that *Higher Education Institutions shall move to a criterion-based grading system that assesses student achievement based on learning goals for each programme, making*

the system fairer and outcomes more comparable. HEIs shall move away from high-stakes examinations towards more continuous and comprehensive evaluation –teachers will also have more autonomy in terms of the selection of assessment method. The questions remains, however, whether teachers possess the necessary skills to make informed decisions regarding the most appropriate assessment format, which is a crucial determinant of students' future outcomes.

Assessment in education has a decisive role to play. It measures the learning and competence of students in terms of their scores and grades while also assisting teachers with reflective and remedial teaching. In a formal system of learner-centric education, assessment has a greater impact on learners than the teacher or the institution. Several factors can potentially affect the output of assessments. From the learners' perspectives, these could be individual learning styles, memory, interest, and other psychological factors. From an institutional standpoint, factors can include the teaching style, teachers' assessment literacy, classroom environment, instruments used for assessment, subject, and type of assessment (DeLuca et al., 2019). Nevertheless, teachers' knowledge of assessment is an undisputed factor in determining the validity of assessment.

Assessment literacy can be understood as teachers' abilities to comprehend the meaning, forms, purposes, strategies, and techniques of assessment, and apply them appropriately. According to the Michigan Assessment Consortium (2015), assessment literacy encompasses a range of beliefs, knowledge, and practices that enable teachers and other stakeholders to utilize assessment effectively for enhancing student learning and achievement. It involves having the necessary knowledge, skills, and processes to design, select, implement, and score. It utilizes high-quality assessments that contribute to improved student learning outcomes. In essence, assessment literacy empowers educators to make informed decisions about assessment methods and utilize assessment data to support and enhance student learning.

The essential knowledge and performance components are presented in Figure 1 below.

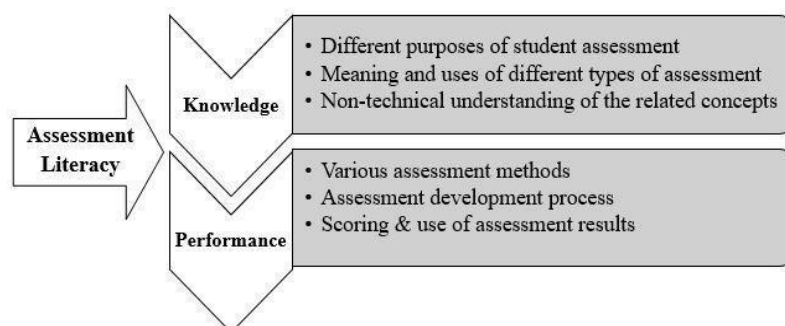


Figure 1: Essentials of assessment literacy
(Adapted from Michigan Assessment Consortium, 2020, pg. 5)

Traditionally, the paradigm of assessment was utilized as a mere tool for learners' evaluation. Over time, educational researchers have broadened the dimensions to encompass 'Assessment as Learning', 'Assessment for Learning' and 'Assessment of Learning'. 'Assessment for learning' provides information about learners during their learning and assists teachers in obtaining information about students' learning and teaching practices that can be modified to improve learning. On the other hand, 'Summative and Formative assessments:' refer to the traditional summative evaluation process, which provides evidence of students' learning at the end of the learning period, while 'Assessment as Learning' is a self-monitoring tool used by learners to evaluate their learning. In a nutshell, assessment literacy is demonstrated when teachers have sufficient knowledge of assessment as well as the capacity to comprehend its shifting paradigm from teachers to learners and traditional to alternative assessments. These assessments are to be practiced in classrooms to cater to learners' autonomy, transparency, and evaluation preferences.

Studies have found that teachers' assessment literacy has a statistically significant impact on learners' achievement, thus illustrating the need for an effective teaching environment and motivated assessment design (Mellati & Khademi, 2018). Teachers' assessment styles, preferences, and actions significantly influence students' learning experiences and achievement (Hattie & Timperley, 2008; DeLuca et al., 2018). In a closed academic environment, it is difficult for teachers to develop assessment literacy by themselves without intervention. However, researchers also report that teachers' knowledge of assessment is insufficient and argue that even when teachers have a considerable understanding of assessment, they do not put their knowledge into practice (Nurdiana, 2020).

The emphasis of the educational evaluation system relies on the cognitive capacities of learners; that is, memory and verbal skills, rather than 21st-century skills such as collaboration, critical thinking, and problem-solving. Studies have identified a disparity between teachers' practice and students' preference for assessment. The contemporary approach to assessment focuses on utilizing alternative methods such as projects, portfolios, and active performance tasks, which are learner-centric education approaches. Alternative assessments, when used with the right strategies, can be used effectively to assess learning outcomes (Adama et al., 2023).

Alternative assessment is characterized as an alternative to standardized, norm-referenced, multiple-choice testing. It includes student involvement in setting learning goals, assessment criteria, and even task alignment. In line with the skill-oriented context of learning, alternative assessment involves the application of higher order thinking, problem solving skills, meta-cognition, collaboration, and intrapersonal skills. Furthermore, it follows a constructive approach to instruction, wherein contextualization in real-world applications, the use of specified criteria and defined standards of performance (Madellan, 2004) are considered. Additionally, the contemporary assessment approach also advocates equity in assessment, students' preferences for assessment, and transparency of assessment, all of which significantly influence the achievement and learning environment. This is based on learner-centric education; learner-centric teaching and learning

assessment focuses on helping learners to think critically, solve real-life problems, evaluate evidence, analyse situations and progress towards higher-order thinking skills.

The traditional practices, based on teachers' instinctive judgment or preferences, affect the learning process. Assessment practices must come from teachers' judgement based on assessment theories, conceptual clarity, and learners' preferences. In all forms of education, assessment drives learning and, therefore, it is necessary to study students' attitudes toward different assessment formats before implementing a new curriculum (Holzinger et al., 2020). Nevertheless, the level of teachers' understanding and proficiency in assessment strategies significantly influences their assessment practices at all educational levels (Deneen & Brown, 2016). As emphasized in a previous study by Popham (2009), assessment literacy remains a crucial domain that demands continuous attention and investment in faculty development, both in the present and future contexts.

Thus, the discussion highlights certain gaps that include the need for further exploration of learners' preferences and needs in assessment (Holzinger et al., 2020; Thomas & Jessop, 2018), enhanced assessment literacy among teachers in higher education (Mellati & Khademi, 2018; Zulia, 2020), and adapting assessment practices for online learning environments (Dutta, 2020; Joshi et al., 2021). One specific problem that has been identified is the disparity between learner-preferred and teacher-preferred assessment tools in higher education (HE). There is a need to ensure that assessment methods align with students' learning needs and preferences (Holzinger et al., 2020). Addressing these gaps in assessment literacy and exploring alternative assessment methods, such as projects, portfolios, and active performance tasks, can lead to a more equitable and learner-centred approach to assessment in higher education (Adama et al., 2023).

In the context of a multidisciplinary university within the higher education ecosystem, the present study aims to explore the assessment literacy of higher education (HE) teachers. It examines HE teachers' preferences and reflections on assessment practices and highlights the disparities between learner-preferred and teacher-preferred assessment tools. Additionally, the study discusses the identified gaps, orientation needs, and the importance of training in alternative assessment methods.

Operationally, assessment literacy in the present research was based on the knowledge component (Fig. 1), with the perspective of understanding teachers' conceptual comprehension of the concept - 'Assessment in education'. Though this may not be the comprehensive meaning of the term, it includes the essence of it. Thus, the aim was to assess the conceptual assessment literacy of practicing teachers to understand their preconceived understanding of assessment with respect to its meaning, forms and purpose, as well as the strategies and techniques of assessment in education. Teachers' current assessment practices were also considered.

Thus, the present study aims:

(A) to gauge assessment literacy among teachers of higher education;

(B) to identify the current assessment practices in higher education; and

(C) to determine the need for alternative assessment practices in light of teachers' reflections.

2. Literature Review

The traditional approach to assessment in higher education is facing significant issues in terms of its alignment with learning outcomes and objectives. These issues include compromised reliability, limitations in assessing higher-order learning, and a lack of transparency in the evaluation and scoring process. Conventional assessment relies on 'pen and paper' types of assessments with simple measurement instruments such as quizzes, true/false questions, and matching types, while this remains at odds with the learning objectives and aims of higher education. Thus, learners' ability to perform independently or in novel contexts is not represented through scores and the learners are not informed of how learning has occurred (Pereira et al., 2015; Knight, 2002). Research suggests that the most used traditional assessment tools are multiple-choice tests, true/false tests, short answers, and essays (Dikli, S., 2003). When the traditional assessment methods are used for summative assessment, the same limitations are carried forward into formative assessment in the absence of teachers' assessment literacy. In response to these challenges, exploring alternative assessment practices becomes imperative. These can be better connected to real-life applications, providing opportunities for learners to utilize their analytical, critical thinking, reasoning skills. Methods include self-assessment and peer assessment in a problem-based learning environment, stimulating deep learning and critical thinking (Segers & Dochy, 2001 assessment). These practices offer promising alternatives to traditional assessment methods, providing opportunities for learners to engage actively in their own learning process and to develop higher-order cognitive skills. The assessment must not completely depend on situational learning or problem-based learning. Considering that the students' approach to learning may depend on the type of assessment used, teachers should employ a diverse range of assessment methods to actively engage students in the learning process. However, researchers also argue that the use of multiple methods of assessment may be confusing for learners to internalize the goals of assessment (Thomas & Jessop, 2018). Different assessment practices can influence students' achievement and student-oriented factors such as commitment, difficulty level, study skills, parental support, and the institution's student support system also play a major role (Mekonnen & Besha, 2019). It has been found that teacher's assessment literacy also has a statistically significant impact on learners' writing achievements, reinforcing the need for effective and motivated assessment designs (Mellati, M., & Khademi, M., 2018).

Research has also highlighted other factors influencing achievement that can be explained at the micro-level, meso-level, and macro-level. Micro-levels include factors such as teachers' personal beliefs, knowledge, experience, and conceptions. Meso-levels deal with institution-level culture and practices, and macro-levels deal with system assessment policies, values, and protocols (DeLuca et al., 2019). Therefore, the selection and integration of multiple assessment methods should be undertaken thoughtfully to ensure clarity and coherence in

communicating the learning objectives to learners. Researchers have also found volume and variety in assessment methods to be an independent factor affecting achievements. The modern assessment practice emphasizes learners' preferences in selecting assessment tools. Holzinger et al. (2020) studied 439 medical students and found that learners prefer objective question formats (aka Multiple-Choice Questions) above other types of assessment. Thomas and Jessop (2018) studied programme assessment data from 73 courses across 14 universities in the UK to determine the difference in assessment loads across the courses. The volume of summative and formative assessment, examinations proportions and varieties of assessment methods were put into use. The study found that research-intensive courses have higher summative assessment loads and a greater proportion of examinations compared to teaching-intensive courses, which have greater varieties of assessment.

Mellati and Khademi (2018) studied the impact of teachers' assessment literacy on current assessment practices and writing outcomes using teachers' assessment literacy inventory, semi-structured interviews, non-participatory observation, and Writing Competence Rating Scale (WCRS). The findings highlighted that teachers' assessment literacy has a statistically significant impact on learners' achievement. Furthermore, teachers' assessment awareness induces an effective teaching environment and motivated assessment design. Zulia (2020) explored teachers' perceptions of classroom-based assessment and the extent to which they are reflected in their practice. The study involved a survey of 22 participants, interviews with five participants and documentary evidence of assessments. The research concluded that the teachers had a good level of assessment literacy and were aware of the principles of classroom-based assessment, although the quality of the assessment methods used was questioned. DeLuca et al. (2019), in their descriptive study, provided empirical evidence for assessment literacy as a differential and situated professional competency. Contemporary views were gathered on five common classroom scenarios. The study involved 453 participants to explore the assessment literacy of teachers and examine their approaches towards assessment in different classroom scenarios. The study provided empirical evidence supporting the notion that assessment literacy is a differentiated and context-dependent professional competency. The findings revealed significant differences in teachers' assessment approaches across teaching divisions and career stages. The complexity of factors such as teaching grade, subject, and individual characteristics also influenced teachers' assessment practices within specific contexts. These findings highlight the need for teachers to develop assessment literacy skills to enhance their understanding and implementation of effective assessment practices. In a review study, Nurdiana (2020) found that some teachers' assessment literacy is insufficient, while other teachers have a high degree of assessment literacy but do not put their knowledge into practice. Khadijeh and Rezaei (2015) stated that assessment literacy is important as it enables teachers to perceive, analyse, and use data on student performance to thereby improve their teaching. The absence of assessment literacy can therefore be seen as a form of 'professional suicide' (Popham, 2011, p. 269).

In the Indian context, researchers have mainly focused their attention on assessment literacy among schoolteachers, with the exception of a few studies that have addressed the need for faculty development in Higher Education. Govindarajan and Srivastava (2020) focus on the potential impact of remote teaching in higher education, and indirectly touch upon the importance of assessment literacy in this context. Their article explores the transformative potential of remote teaching in higher education. The authors compare the current shift to virtual learning. As the education landscape transitions to online platforms, it becomes crucial for educators to possess a strong understanding of assessment practices and techniques that can effectively measure student learning in virtual environments. Therefore, as the future of higher education evolves towards remote teaching, assessment literacy remains a critical component for educators to navigate the challenges and optimize student learning outcomes. Dutta (2020) explored the impact of digital social media on Indian higher education during the COVID-19 pandemic crisis. The author examined the use of social media platforms for disseminating learning resources to students and analysed the effectiveness of online classes and e-learning pedagogy through qualitative analysis. The findings reveal that the lockdown and shift to online learning have had a significant impact on students, causing stress, anxiety, and a sense of helplessness. On the other hand, the provision of online classes has proven beneficial, not only in terms of educational advancement but also for students' mental well-being. The study indicated the importance of assessment literacy in online education and suggested the need to be proficient in designing and conducting assessments online. In a similar study, Joshi et al. (2021) explored the impact of the COVID-19 pandemic and focussed on teachers' perspectives on online teaching and assessments. Using interpretative phenomenological analysis, the study identified four main categories of barriers faced by teachers: challenges in home environment settings; institutional support barriers; technical difficulties; and personal problems. The findings underscore the importance of assessment literacy among teachers to overcome these barriers and ensure effective online teaching and assessment practices. Thus, while assessment literacy has not received significant attention directly, researchers have highlighted the need for increased focus on faculty development in higher education, confirming the necessity for further research on assessment literacy.

3. Methodology

This study employed a descriptive survey design. 58 teachers from 16 disciplines within a single multidisciplinary university participated in the study. Incidental sampling method was employed, with selection being based on voluntary participation, accessibility, and availability. Individuals had the autonomy to decide whether or not to participate in the study. This ensured that participants had a genuine interest in the research topic and were more likely to provide valuable insights (Creswell, 2014; Cohen, Manion, & Morrison, 2018). The participation in the survey is presented in Table 1.

Table 1: Survey sample details

Discipline	n	Discipline	n
Health Science	2	English Language	2
Medicine	2	Liberal Arts	1
Nursing	5	Economics	1
Information Technology	3	Banking and Finance	2
Computer Studies	4	Management Studies	13
Technology	13	Media and Communication	2
Design	4	Telecommunication	1
Architecture	1	Biological Science	2
Total Sample Size (N)= 58			
Where 'n' stands for number of samples			

There were 58 participants from 16 disciplines, as presented in Figure 2.

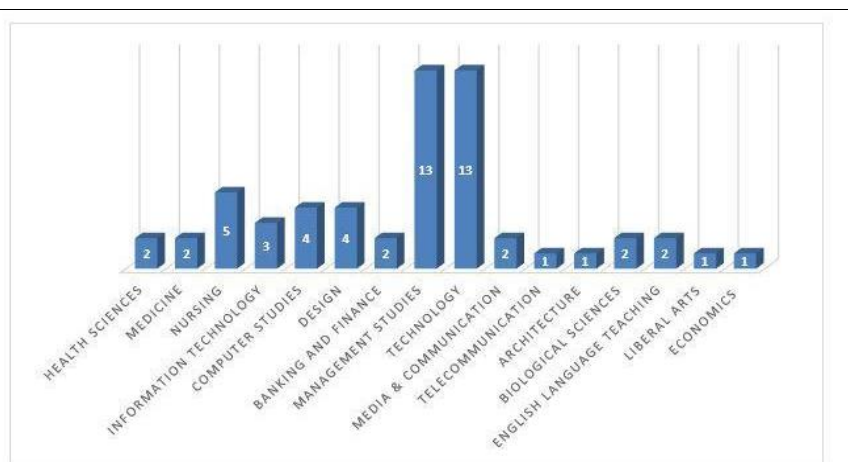


Figure 2: No. of participants according to participants' disciplinary affiliations

3.1 Tool for data collection

A researcher-made questionnaire (Appendix I) was used for assessing 'Assessment Literacy' including both open-ended and close-ended questions. A systematic process was followed to design and develop the questionnaire.

Tool development: The tool development process included:-

1. Group discussion with a panel of five experts, consisting of faculty members from teacher education, experienced researchers, and practitioners in the field of assessment, with the purpose of outlining the scope, identifying key constructs and dimensions of tools.
2. Designing close-ended questions (MCQs) and framing open-ended questions.
3. Content validation from researcher and language experts.
4. Pilot testing the questionnaire.

5. Expert validation after refinement.
6. Finalization of the questionnaire.

Nature of the questionnaire: The questionnaire included both open- and close-ended questions to capture two aspects: 1. Assessment literacy; and 2. Assessment practices. The assessment literacy aspects encompassed dimensions such as the concept of assessment, forms and functions of assessment, purpose of assessment literacy, and strategies and techniques of assessment. Assessment practices aspects focused on the purpose of assessment, ongoing strategies, learner-preferred assessment strategies, and teacher-preferred assessment strategies.

The questionnaire was designed for measuring HE teachers' assessment literacy. Close-ended MCQs were added to retain objectivity and simplicity in assessment (Ben-Simon et al., 1997), while open-ended questions were included in order to avoid bias through suggested responses (Reja, U., et al. 2003). Also, they were used to gain HE teachers' insights into their current assessment practices.

Thus, the questionnaire (Appendix I) included a set of 15 questions - both closed and open-ended. The main aims were to gauge the teachers' assessment literacy and to identify the current assessment strategies used by the teachers, as shown in Table 2.

Table 2: Nature of questionnaire

S.N.	Purpose	No. of questions	Details
I	Assessment literacy aspects		
1	Meaning of assessment	3	Multiple choice questions (MCQs) - <ul style="list-style-type: none"> • Incomplete statement format • Scenario-based • Image-based • Single response
2	Forms and functions of assessment	3	
3	Purpose of assessment literacy	2	
4	Strategies and techniques of assessment	2	
II	Assessment practices		
5	Purpose of assessment	1	<ul style="list-style-type: none"> • Open-ended reflections
6	Ongoing strategies for assessment	1	
7	Learner-preferred assessment strategies	1	
8	Teacher-preferred assessment strategies	1	
9	Successful assessment practices	1	

3.2 Research Process

Initially, a literature review was performed to establish the theoretical foundations of assessment literacy and related concepts. This involved examining national and international documents, research papers and articles in the field, highlighting studies and findings to establish a strong theoretical framework. This helped outline the essential components for assessing the assessment literacy of the HE teachers. Subsequently, three rounds of discussion with a panel of six

experts were held to develop the structure of the 15-question tool for the *Assessment of Higher Education Teachers' Assessment Literacy* and to obtain content validity for it. The questionnaire data were collected using a Google form after obtaining permission. The data were gathered using both quantitative and qualitative processes. This helped to investigate the assessment literacy and gain insights into the assessment practices employed by teachers. The collected data were then analysed using basic statistical methods. The findings were presented using percentages, tables, and graphs to represent the results and help uncover the patterns in the data. These patterns ultimately gave insights for drawing the conclusions of the research. The research process is summarized in Figure 3.

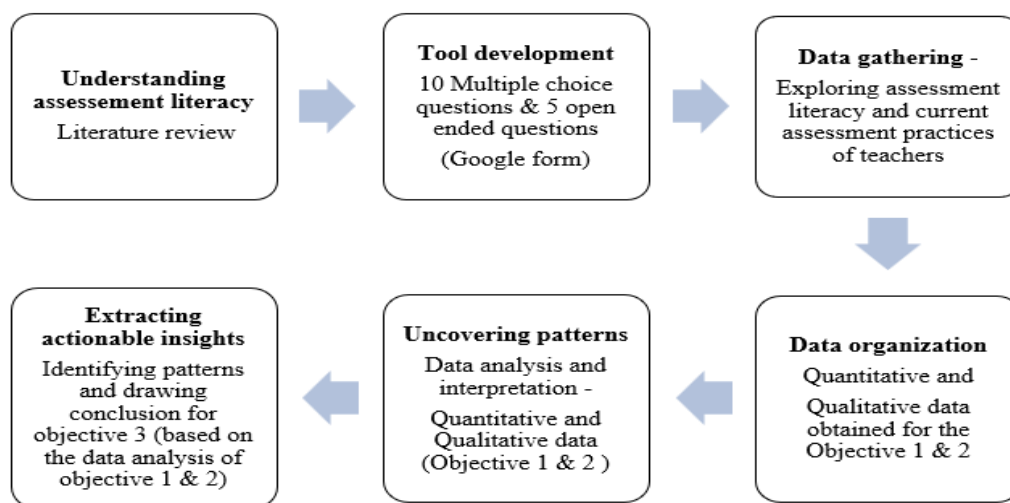


Figure 3: The research process

4. Data Analysis and Results

Descriptive statistics were used for the close-ended questions, mostly using percentage and graphical representation. The qualitative data gathered through open-ended questions were subjected to thematic analysis. Furthermore, the quantification of qualitative data was achieved using frequency of occurrence to understand the trends and patterns for objective 2. The data analysis is represented under the three sections presented below.

Section A - (For objective 1: Assessment literacy among teachers of higher education)

- 1) Participants' assessment literacy (Tables 3 and 4)
- 2) Teachers' responses on the purpose of assessment (Table 5)

Section B - (For objective 2: To identify the current assessment practices in higher education)

- 3) Online and offline assessment strategies used by teachers (Figure 6)
- 4) Teachers' responses on learner-preferred current assessment practices (Figure 7)
- 5) Teacher-preferred current assessment practices (Figure 8)

Section C- (For objective 3: To determine the need for alternative assessment practices in light of teachers' reflections)

6) Rationalizations for preferred assessment strategies (Table 8)

7) Teachers' reflections on successful and unsuccessful assessment strategies (Table 9)

The major findings are:

1. The majority of teachers (79%) have moderate levels of assessment literacy, compared to 16% teachers with a low level and only 5% showing a high level of assessment literacy.
2. Teachers lack clarity in aspects of assessment literacy such as tests, 'Assessment for learning' and 'Assessment of learning', various types of assessments, purpose of evaluation, strategies and techniques of alternative assessments.
3. Currently, teachers vastly prefer offline practices and so training in alternative online strategies is needed.
4. Greater emphasis was laid on individual performance and knowledge recall in teacher-preferred assessments.
5. The top three assessments preferred by learners were Case analysis/Discussion/Presentation (20%), Quiz/MCQs (16%), and Project (group/Field/live) (14%).
6. Though teachers have been using varied assessment strategies, there is a gap in teacher-preferred and student-preferred strategies.
7. Teachers are aware of the specific purpose/reasoning for the assessment strategies they have been practicing.
8. Certain students' preferences for strategies such as debates, research-based assignments, simulation, seminar and reflections are not taken into consideration for regular assessment.
9. Descriptive questions, online written exams, group presentations, open book online exams and use of whiteboard are examples of strategies that need training to convert them into successful strategies.
10. There is a need to improve assessment literacy among teachers.

A. Assessment Literacy

After recording the individual scores of the respondents, these scores were grouped into three assessment literacy levels; low, medium and high. This scale is shown in Table 3.

Table 3: Assessment literacy level

Assessment Literacy (AsL)		
AsL Level	Scores	n
Low	Under 33%	9
Moderate	Up to 66%	46
High	Above 66%	3
N		58

The distribution of the assessment literacy levels (Figure 4) indicates moderate assessment literacy in the majority of respondents (79%), compared to 16% of teachers who showed only a low level and just 5% showing a high level.

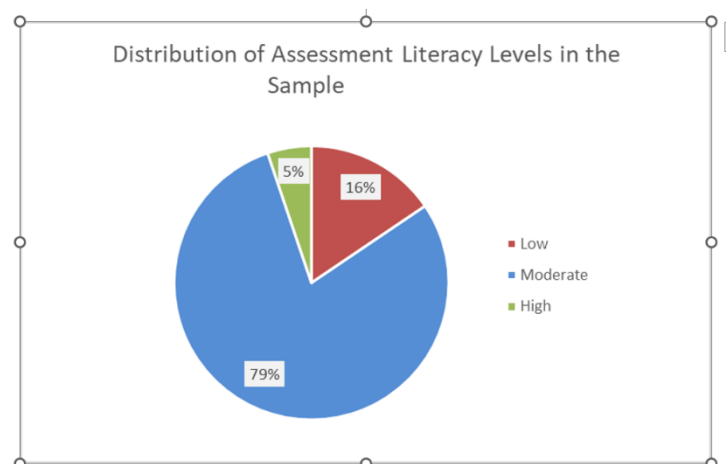


Figure 4: Assessment literacy levels

Data gathered using the MCQs were analysed, as shown in Table 4.

Table 4: Assessment literacy

Assessment Literacy (AL) aspects	Components of AL	Component code	Percentage of HE teacher with	
			Correct response	Incorrect response
Concept of assessment	Meaning of a test	M	44.83%	55.17%
	Individual assessment needs – altering assessment	IAN	58.62%	41.38%
	‘Assessment for learning’ and ‘Assessment of learning’	AoL/AfL	12.07%	87.93%
Forms and functions of assessment	Difference between formative and summative assessment	FA/SA	81.03%	18.97%
	Function of formative assessment	Fn.	72.41%	27.59%
	Various types of assessment	T	27.59%	72.41%
Purpose of assessment	Purpose of assessment	PA	68.97%	31.03%
	Purpose of evaluation	PE	32.76%	67.24%
Strategies and techniques of assessment	Appropriateness of assessment strategies	A	55.17%	44.83%
	Strategies and techniques for alternative assessment	S/T	17.24%	82.76%
Where total number of sample (N)=58				

The assessment literacy aspects have been depicted in Figure 4, shown below:

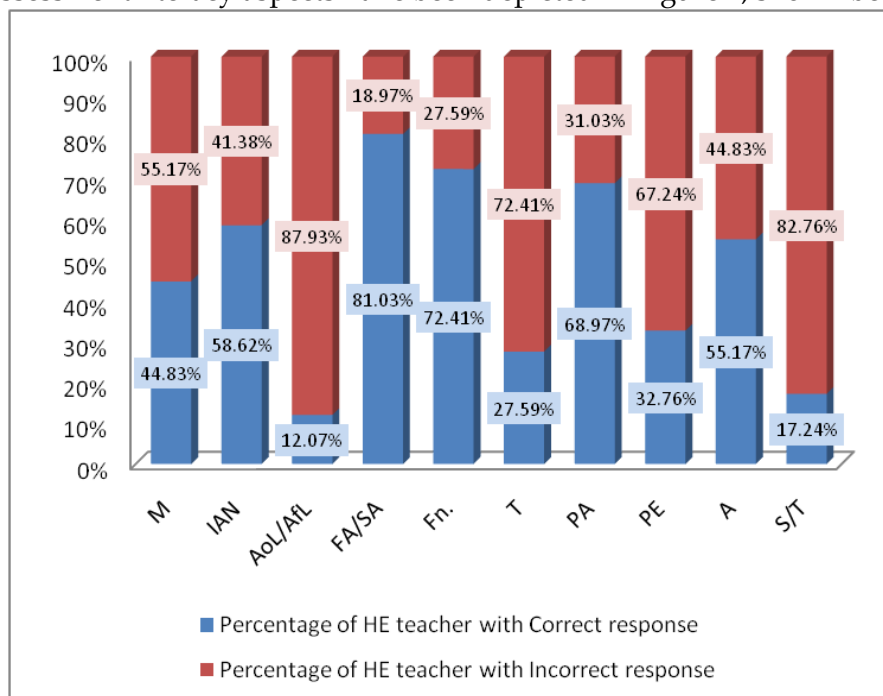


Figure 5: Teachers' assessment literacy

The data revealed that more than half of the teachers were not clear about concepts such as testing, measurement, assessment and evaluation in education. Many of the participants lacked knowledge regarding alternative approaches to assessment while the majority of them (88%) were unsure about the essential concepts related to 'Assessment for learning'. Thus, teachers lack clarity in their understanding of the term assessment. Although most of the teachers (81%) were aware of the meaning of - and difference between - formative and summative assessment, they had lesser understanding of other forms of assessment such as diagnostic, norm-referenced, and criterion-referenced assessments. The purpose of assessment and evaluation was not clear to many of the teachers (68% and 67%, respectively). Very few teachers (17%) demonstrated an understanding of the strategies and techniques of assessment, which confirms the need for conceptual clarity. Furthermore, a lack of clarity on the appropriateness of the assessment strategies was found in almost half of the respondents (45%).

The results of the open responses received from teachers regarding the purpose of assessment are listed below in Table 5, indicating the 21 key themes that emerged from the thematic analysis.

Open-ended item 1: In your view, what is the purpose of assessment?

Presented in Table 5, below, are the key themes that emerged from teachers' responses on the purpose of assessment, reflecting a diverse range of perspectives.

Table 5: Teachers' responses on the purpose of assessment

SN	Teachers' responses on the 'Purpose of Assessment'	SN	Teachers' responses on the 'Purpose of Assessment'	SN	Teachers' responses on the 'Purpose of Assessment'
1	Evaluate students' understanding	8	Identify learners' interest	15	Ensure student engagement
2	Understand best teaching practices	9	Judge the knowledge	16	Assess learners' acquired skills and abilities
3	Collect relevant information on students' performance	10	Understand learning requirements	17	Decide on promotion
4	Differentiate between excellent and poor students	11	Understand difficult topic/content	18	Make decisions about progression
5	Provide help to students having learning difficulties	12	Identify difficult topics and modify teaching methods accordingly	19	Provide feedback based on learning
6	Reflect on the effectiveness of the adopted pedagogy	13	Determine how well learning matches with the outcomes/expectations	20	For exams
7	Identify learning styles	14	Gauge the transfer and assimilation of knowledge	21	Understand the learning process

The responses indicate that teachers believe assessment serves multiple purposes, including supporting holistic development, promoting reflective teaching and learning, driving student engagement and progress, enabling personalized instruction, and encompassing a range of objectives to enhance the educational experience. The responses can broadly be classified under five main themes indicating the purposes of assessment: 1) Evaluation and Differentiation; 2) Understanding Teaching and Learning; 3) Judging Learners' Interest and Knowledge; 4) Understanding Difficult Topics and Learning Outcomes; 5) Student Engagement, Progression, and Feedback. Even though some responses lacked clarity and specificity, making it difficult to understand the intended actions or strategies associated with those purposes, it can be inferred that the majority of the responses focus on quantitative assessment methods, potentially overlooking the value of qualitative approaches that provide deeper insights into students' learning. Also, there are implicit assumptions about the purpose of assessment, such as ranking students or making progression decisions, which are teacher-centric. These should be critically examined to ensure a more comprehensive and student-centred approach. Furthermore, student involvement in the assessment process is not prominently mentioned, despite its potential to foster student ownership of learning.

B. Current Assessment Practices

To understand the current assessment practices implemented by teachers, data related to learners' preferred strategies and teachers' preferred strategies were gathered and the results are presented as follows.

Open-ended item 2: What are the strategies you are using to assess your students?

Data revealed that the teachers generally use offline assessment strategies as opposed to online strategies, as shown below in Figure 6.

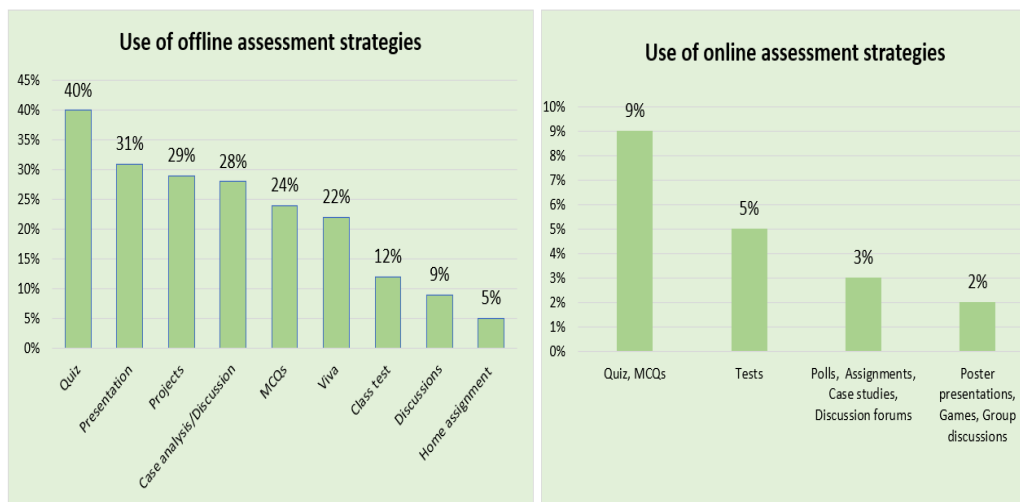


Figure 6: Use of the offline and online assessment strategies mainly used by teachers

Practical, demonstration, open book test, article writing/evaluation, debates, tutorials, written assignments, seminars, mind maps, open-ended questions, pair-share, portfolios, panel discussion, journal writing, term-end papers, research-based assignments, lab tests, analysing company white papers, report writing, movie reviews, video analysis and role plays are the offline strategies used by 2-3% teachers.

When asked for the online assessment strategies they employ, respondents listed such strategies as personal interaction in online mode, experiential learning, dialogue, online lectures, class participation, punctuality in joining classes, involvement and participation, attentiveness, timely submission of assignments, self-assessments, Google forms, Edmodo, Google classroom, peer review of class work, exercises that have a reflective component, online extempore sessions, oral practical activities, problem solving, break-out rooms, interactive online tasks and rubrics for evaluation. Many of these are not even assessment strategies, indicating the teachers' lack of conceptual clarity.

Open-ended item 3: What are the assessment strategies most preferred by your students?

The main themes that emerged through thematic analysis for learners' preferred assessment strategies are shown in Figure 7, along with their frequency of occurrence.

Table 6: Current Assessment Practices: Learner Preferred

Current Assessment Practices: Learner Preferred		
Assessment types	Percent	f
Case analysis/Discussion/Presentation	20%	12
Quiz/MCQs	16%	9
Project (group/field/live)	14%	8
Discussion	12%	7
Online assessment (Mentimeter, Spinwheel)	11%	6
Assignment	10%	6
Written exam/ paper-pencil tests	8%	5
Viva / Oral presentation	6%	3
Seminars/ Lab tests	3%	2
	Total	58

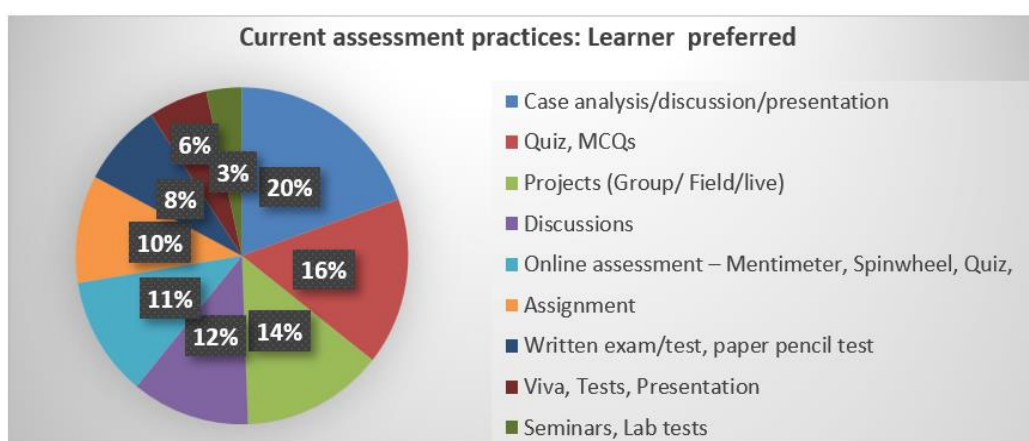


Figure 7: Learner-preferred current assessment practices

Apart from these commonly used strategies, other strategies such as home assignments, open-ended questions, practical tasks, demonstrations, debates, journals, research-based assignments, role plays, tutorials, written tests, games, group discussions, think-pair-share, mini cases, simulation, choral reading, Socratic seminars, interactive videos, reflections and mock interviews were additional strategies sometimes used by some of the teachers.

Open-ended item 4: Which assessment strategies do you prefer, and why?

The responses were categorized based on the assessment types preferred by the teachers and represented in the table below (Table 7).

Table 7: Current Assessment Practices: Teacher Preferred

Current Assessment Practices: Teacher Preferred		
Assessment types	Percent	f
Quiz/MCQs	27%	16
Viva	15%	9
Online assessment (e.g. Mentimeter, Spinwheel)	15%	9
Case analysis/Discussion/Presentation	12%	7

Presentation	7%	4
Assignment (group/individual)	7%	4
Project (group/field/live)	5%	3
Written exams	5%	3
Discussions	5%	3
Practical tasks	2%	1
Total		58

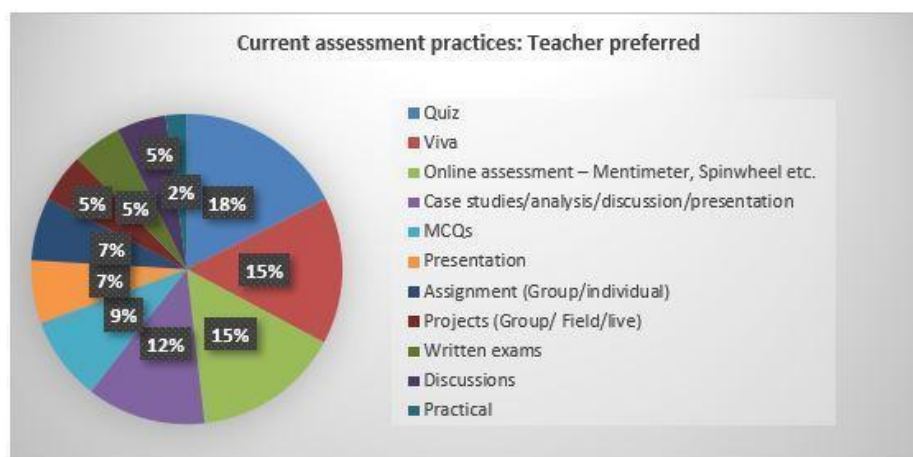


Figure 8: Teacher-preferred current assessment practices

In terms of the assessment types preferred by learners, the top three choices were case analysis/discussion/presentation (20%), quiz/MCQs (16%), and project (group/field/live) (14%). These assessment methods tend to promote active engagement, collaborative learning, and practical application of knowledge. On the other hand, the most preferred assessment types of teachers were quiz/MCQs (27%), viva (15%), and online assessments (e.g. Mentimeter, Spinwheel) (15%). This indicates a greater emphasis on individual performance and knowledge recall in teacher-preferred assessments.

One notable difference was the higher preference for discussion as an assessment type among learners (12%) compared to teachers (5%). This suggests that learners value opportunities for dialogue and exchanging ideas during assessments, which aligns with their desire for active participation and engagement in the learning process.

Assignment was chosen by 10% of learners compared to 7% of teachers, indicating that learners appreciate assignments as a means to demonstrate their understanding and apply their knowledge. Conversely, teachers placed a higher emphasis on viva (15%) and presentation (7%) as preferred strategies for assessment, suggesting a focus on evaluating oral communication skills and the ability to deliver information effectively.

Despite these differences, both learners and teachers showed a shared preference for online assessments, with 11% and 15%, respectively. This suggests a recognition of the benefits and convenience offered by technology-mediated assessments in facilitating learning and providing timely feedback.

Overall, the data highlights a difference in preferences between learners and teachers regarding assessment types (shown in Figures 7 and 8). Learners tend to gravitate towards assessments that involve active participation, collaborative activities, and real-world applications, while teachers lean towards assessments that focus on individual performance and traditional evaluation methods. Understanding these differences can help in designing assessment strategies that align with the needs and preferences of both learners and teachers, promoting effective and engaging assessment practices.

The main reasons given for the selection of assessment strategies are presented in section C.

C. Teachers' Reflections

Reflections by the teachers on their preferred assessment strategies and the reasons for their selections are presented below in Table 8.

Table 8: Rationales for preferred assessment strategies

Teachers' preferred assessment strategies	Teachers' reasons for their selection of assessment strategies
Quiz	<ul style="list-style-type: none"> • Objective • Useful for formative assessment • Fast, less time-consuming • Accurate analysis of the learning
Viva	<ul style="list-style-type: none"> • Clear picture about each student • Overall understanding of students • No room for copying, easy to gauge students • Opportunity for individual assessment • Real-time analysis • Immediate overview of students' understanding without any bias
Case studies/ analysis/discussion/ presentation	<ul style="list-style-type: none"> • Evokes real-time thinking • Students study a lot • Allow students to write without fear of judgment
MCQs	<ul style="list-style-type: none"> • Preferred by students • Easy to conduct and evaluate • Less time-consuming • Reduce chances of ambiguity • Easy to check the basics • Convenient
Presentation	<ul style="list-style-type: none"> • Opportunity for personal interaction • Student involvement • Real-life applications • Presentation skills, develops confidence • Quick feedback can be given
Projects (group/ field/live)	<ul style="list-style-type: none"> • Summarization • Knowledge application • Peer learning • Students choose what they like to work on

	<ul style="list-style-type: none"> • Encourages team spirit and student interaction • Scope for creativity
Written exams	<ul style="list-style-type: none"> • Test the learning of students • Check writing ability and knowledge of students
Discussions	<ul style="list-style-type: none"> • Room for group work
Open-ended questions	<ul style="list-style-type: none"> • Opportunities for students to express themselves
Article analysis	<ul style="list-style-type: none"> • Analytical abilities • Cover contemporary issues not found in textbooks
Game-based learning	<ul style="list-style-type: none"> • Assists self-evaluation • Enhances practical skills
Open book test	<ul style="list-style-type: none"> • Challenging
Interactive video case	<ul style="list-style-type: none"> • Apply theoretical learning to a practical scenario

The findings indicated that teacher-centric strategies focus on assessing learning outcomes and gaining insights into students' progress, while student-centric strategies emphasize assessment for learning and creating an interactive learning environment. The reasons given for the selection of these strategies include objectivity, time efficiency, real-time analysis, personal interaction opportunities, and skill development. Thus, more attention is currently paid to 'Assessment of Learning' rather than 'Assessment as learning' or 'Assessment for learning'.

The HE teachers' preferences for assessment tools and their rationales indicate that there is a lower priority on promoting deeper understanding, critical thinking, problem-solving skills, creativity, collaboration, and self-evaluation. On the other hand, alternative assessment strategies prioritize engagement and the active involvement of students in the assessment process. The participants' preferred assessment strategies are primarily based on traditional methods. These strategies are chosen for their objectivity, efficiency in administration, ability to provide a clear understanding of students' performance, opportunities for individual assessment, and real-time analysis. Consequently, the preferences expressed in the table reflect a predominant reliance on teacher-centric assessment approaches aimed at evaluating students' knowledge and comprehension of the subject matter.

Furthermore, the table displayed the HE teachers' rationales for selecting specific assessment tools, which were based on factors such as objectivity, formative assessment opportunities, real-time analysis, student engagement, ease of administration and evaluation, and the ability to measure overall learning. These considerations reflect the goals and priorities of the teachers in assessing student progress and promoting effective learning outcomes.

The table also highlights the limited evidence of teachers' knowledge and utilization of alternative assessment methods. Alternative strategies such as case

studies, discussions, projects, game-based learning, open-book tests, article analysis, and interactive video cases offer opportunities for students to demonstrate practical skills, engage in collaborative learning, apply theoretical knowledge to real-world scenarios, and express their thoughts and ideas. These methods promote critical thinking, problem-solving, creativity, and self-evaluation.

The findings indicate that there is a lack of clarity among teachers regarding assessment-related terms such as strategies, tools, and approaches. Certain student-preferred strategies, including debates, research-based assignments, simulations, seminars, and reflections, were not taken into consideration. However, the reasons for their selection of specific strategies indicated clarity among teachers in using them for assessments.

Thus, the limited mention of alternative assessment tools (as shown in the table) suggests that teachers may have limited awareness or understanding of the potential benefits and applications of these methods. It is essential for educators to enhance their assessment literacy and explore diverse assessment approaches that cater to the varying needs and preferences of students. By incorporating alternative assessment methods into practice, teachers can create a more inclusive and engaging learning environment that fosters deeper understanding, critical thinking, and greater skill development.

Open-ended item 5: Reflect on your ‘successful’ and ‘unsuccessful’ assessment practices during the past two years.

Reflections on item 5 were collected from the respondents. The results are indicated in Table 9, as follows.

Table 9: Reflections on successful and unsuccessful assessment strategies

Successfully implemented assessment strategies	Unsuccessful assessment strategies
<ul style="list-style-type: none"> • MCQs and short questions • Viva (online/offline) • Continuous quizzes • Verbal assessment • Quizzes • Tests • Projects • Home assignments • Case analysis • Article writing • Project-based learning 	<ul style="list-style-type: none"> • Descriptive questions • Online written exams • Group presentations • Open book online exams • Term-end conventional tests • Use of whiteboard

Reflections on the successes and failures of various assessment strategies in online and offline modes were mixed. MCQs, short questions, viva (online/offline), continuous quizzes, verbal assessment, quizzes, tests, projects, home assignments, case analyses, article writing, and project-based learning were successful

strategies, while descriptive questions, online written exams, group presentations, open book online exams, term-end conventional tests, and use of whiteboard were unsuccessful.

Analysis revealed that there is an emerging need for training on innovative, alternative assessments. Comparison between the learner-preferred strategies and the teacher-preferred strategies revealed a mismatch. Apart from commonly used assessment strategies, several other forms – such as home assignment, open-ended questions, practical tasks, demonstrations, debates, journaling, research-based assignments, role plays, tutorials, games, group discussions, think-pair-share, mini-cases, simulations, choral readings, Socratic seminars, interactive videos, reflections, and mock interviews – were preferred by students but were infrequently practiced by teachers. This reinforces the need for the adoption of alternative assessment strategies by teachers. Furthermore, convenience of implementation, less consumption of time, and ease of evaluation were found to be among the prominent reasons given for the selection of assessment strategies.

Comparison between Table 8 and Table 9 highlights both the existing knowledge and potential gaps in assessment practices among HE teachers. Table 1 reveals that teachers have a concrete understanding of traditional assessment strategies, as indicated by their preferences. Their reasons for selecting these strategies, such as objectivity, time efficiency, and real-time analysis, demonstrate their awareness of the benefits of these methods in evaluating student performance. However, the limited mention or absence of alternative assessment tools, as shown in Table 8, suggests a need for further training and exploration. Strategies such as debates, research-based assignments, simulations, and seminars, which promote critical thinking and creativity, were not considered by teachers for assessment purposes. This highlights a potential gap in their knowledge of alternative assessment methods. Table 9 provides additional insight by showcasing the assessment strategies that have been successfully implemented and those that have not yielded the desired outcomes. While traditional strategies such as MCQs and written exams were deemed successful, some alternative methods, including group presentations and open book online exams, were not perceived to be as effective. These findings underscore the importance of addressing the training needs of HE teachers in terms of assessment literacy and alternative assessment tools. Comprehensive training programs can equip teachers with the necessary knowledge, skills, and resources to implement a wider range of assessment strategies that cater to diverse student needs and promote deeper learning outcomes.

5. Discussion

The present study, based on current assessment practices, showed that assessment literacy among teachers in higher education needs to be improved. Overall, the results suggest that higher education teachers are inclined towards traditional assessment methods. Similar findings were observed in previous studies, indicating persistently low levels of assessment literacy among teachers and a lack of theory-driven instruments in formative assessments (Yan & Pastore, 2022).

Traditional assessment methods are frequently preferred by teachers, compared to other assessment strategies. The findings also underscore persistent gaps between learner-preferred and teacher-preferred assessment practices. Though many teachers use online assessment strategies, few use student-preferred strategies such as debates, research-based assignments, simulations, seminars, and reflections. There was a lack of clarity among teachers on assessment strategies, tools and approaches, thereby indicating inadequate awareness and preparation. The present study thus found differences in the preferred assessment strategies among teachers and learners. The study conducted by Pereira and Flores (2016) provides evidence of such a contradiction between teachers' conceptions of assessment and the practices on similar lines.

Developing 'assessment literacy' or 'learning to assess' is a complex process that demands continuous negotiation with shifting paradigms of assessment, alongside other evolving educational and pedagogical theories related to individualization, self-assessment, constructive feedback, peer-assessment, spaced learning, and differentiated assessment. A lack of substantial knowledge on assessment practices significantly influences learning outcomes (Oo et al., 2023; DeLuca et al., 2019; Bennett, 2011, as cited in Mellati & Khademi, 2018). Research emphasizes that improved assessment literacy among teachers can develop clarity among learners on the overall process and evaluation criteria. Assessment literacy enhances student engagement and motivation in learning (Hannigan et al., 2022). Teachers' assessment literacy has a statistically significant impact on learners' achievement (Mellati & Khademi, 2018). It is apparent from the findings that teachers' reasoning and judgement on assessment methods is more in favour of conventional assessment practices that assess lower-order thinking and recall skills, focusing on evaluating oral communication skills, the ability to deliver information effectively and so on. This translates into a lower inclination towards active participation, collaborative activities, real-world applications, and performance-based approaches that support learner-centred practices.

Contrary to the findings of some similar studies (Sun & Zhang, 2022), the teachers' responses were not completely unsatisfactory. Many teachers practiced strategies such as MCQs, short questions, viva (online/offline), continuous quizzes, verbal assessment, quizzes, tests, projects, home assignments, case analyses, article writing, and project-based learning, which are found to be more successful than strategies such as descriptive questions, online written exams, group presentations, open book online exams, term-end conventional tests, and assessments using interactive whiteboards. Deep-level strategies involving higher order thinking are the preferred assessment tasks and are considered to be successful strategies by higher education teacher participants. The teacher-preferred strategies that elicit responses restricted to lower-level thinking, while involving learners only superficially, have been considered less successful strategies. In their study, Kim and Lee (2021) observed that various factors are responsible for low scores among teachers in assessment literacy, including personal factors, professional factors, institutional culture and factors related to state policy. By promoting a deeper understanding of assessment principles and strategies, educators can design assessments that align with learners' needs and foster higher-order thinking.

The present study reveals that teachers prefer assessments that are convenient to implement, less time-consuming and easy to evaluate. These preferences indicate an inclination towards the surface approach of completing assessment tasks without demonstrating in-depth learning. Performance-based assessments serve as an alternative to traditional methods and promote deep-level learning. The present findings contradict those of previous research which indicate that learners prefer objective styles of question format (MCQ) above other assessment types (Holzinger, 2020; Dang & Tsang, 2022). However, the findings of the present study indicate learners' preference for performance-based assessments. Tomas and Jessop (2018) speculate that learners focus on achieving grades and thus mainly concentrate on work that counts towards these. Also, attention needs to be paid to the minimal use of alternative performance-based strategies and the lack of consideration being given to learners' preferences in assessments. The present research findings align with those of Areekkuzhiyil (2019), who states that deliberate efforts are required from academicians and authorities to make assessments more dynamic and fruitful.

Overall, the present study addresses the low levels of assessment literacy, lack of accommodation of learners' preferred strategies and minimal use of performance-based and alternative assessment strategies. Similar findings were reported in the literature in China, which reveals a lack of assessment literacy among university English teachers (Xu & Brown, 2017).

Furthermore, the present work also highlights the need for improving awareness among teachers about various assessment strategies. Previous studies have confirmed that learner-centric assessment practices enhance the active involvement of the students, produce feedback, enable collaboration between students and faculty and allow teachers to realise how learning occurs (Webber, 2012 cited in Pereira et al., 2016). The conventional approach to assessment must be used judiciously, in combination with performance-based assessments, considering the learning outcomes. Holzinger et al. (2020) suggest that MCQs must be well constructed, allowing for the evaluation of taxonomically higher-order skills rather than simply recall or recognition-type questions.

Unlike previous research carried out in the area of assessment literacy, this research work presented an apparent depiction of assessment literacy and practices. The study utilized the teacher-preferred assessment strategy (i.e. MCQs) for participants to self-assess their own assessment literacy.

Although the perceptions on assessment-related concepts cannot be generalized, they are noteworthy at both local and institutional levels.

6. Recommendations

The results indicate that strategies supporting skill enhancement, collaboration, creativity, and performance are less practiced. Teachers need formal training to implement these alternative strategies alongside their regularly practiced assessment strategies. These reflections require further exploration and subsequent data gathering in order to understand the nature of training programmes that should be offered to faculty. Similar surveys can be conducted in future to verify the differences between learner-preferred and teacher-preferred

assessment practices at higher education level. Learners can also be involved to understand the current assessment practices offered by their teachers in offline as well as online modes of teaching and learning. Teachers' readiness to adopt new alternative means of assessment needs to be addressed as early as possible. In view of the observations and findings, the researchers recommend that further exploration is needed in the area of assessment literacy among higher education teachers and further analysis is needed in terms of alternative assessments. This study can be taken ahead by obtaining data from all the stakeholders and then triangulating it, which will give insight into the concrete needs for alternative assessment training.

7. Conclusion

In conclusion, the National Education Policy - 2020 emphasizes the need for a shift towards scientific and formative assessments that focus on the application of knowledge. It highlights the significance of assessment literacy among teachers to ensure the validity and fairness of assessments, as well as the importance of faculty autonomy in fostering innovative teaching and assessment practices (NEP, 2020). However, the findings of the present study address specific research gaps in the field of assessment in higher education. In light of policy expectations and the increasing demands of the modern education system, this study has significant implications for faculty development programs and educational policymakers. The study reveals a need to improve HE teachers' assessment literacy, as evidenced by their lack of clarity regarding tests, the discrepancy between teachers' and students' preferences for assessment methods and the limited reference to performance-based, formative and alternative assessment strategies. While some educators exhibit proficiency in specific aspects of assessment, there remains a clear need for comprehensive training on the fundamental principles of educational assessment and evaluation, as well as the implementation of student-centred and performance-based assessment practices (Govindarajan & Srivastava, 2020; Dutta, 2020; Joshi et al., 2021). To address these gaps, targeted training on assessment, reforms in teacher training and development programs are necessary to enhance assessment literacy and promote effective assessment practices that are aligned with learning outcomes. Further research on a larger scale is recommended to better understand the status of assessment literacy as well as the assessment practices in Indian universities and to explore the impact of enhanced assessment literacy on student learning outcomes and the overall learning environment.

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