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Multidimensional Holistic Assessment Framework (HAF): A Case Study of Exploring the Discourses from Elementary School Teachers

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Abstract

The paper investigates the experiences and perceptions of the elementary school teachers implementing a self-designed Holistic Assessment Framework (HAF). This is a transformative multidimensional assessment framework focused on transforming the assessment practices in elementary education, making them more diverse as well as holistic, tailored to the unique needs of the learners. The HAF reflects in detail the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domain. It follows a participatory, inclusive, and learner centric approach and includes assessments of dimensions - physical development, socio-emotional and ethical development, cognitive development, language, and literacy development, and, aesthetic and cultural development. The teachers' discourses based on the implementation of this framework on Grade I students presented as a case. Semi-structured interviews were conducted of elementary teachers (n = 17). The applicability of the framework was determined with the help of hybrid approach including deductive and inductive analysis of the data obtained on the predetermined themes. The paper contributes to the ongoing discourse of HAF, presenting valuable insights on application of holistic assessments and practical insights in a real-world context for teachers and parents. The assessment framework guides and empower teachers to conduct effective learner centric assessments to improve learning and confidence in their students. This framework can be adopted by teachers to incorporate holistic assessments for taking the traditional assessment system towards student centricity and completeness.

Keywords:

Assessment Framework, Innovative Multidimensional Assessments, Elementary Education, Holistic Education, Assessment Reforms.

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Introduction

Background

Learning is an active and interactive life-long process. In formal education system assessments provide us information about the learning progression of learners. Assessment and evaluation are integral parts of the teaching

and learning process at each level of education. Essentially, it is crucial for teachers to understand how children learn in the foundational years, even before they talk about how children should be assessed. Children in this age group have a natural sense of curiosity and so they try to make sense of the world around them by wondering and trying out things. First hand experiences are therefore important for them that would involve manipulation, exploration, and experimentation. Thus, if learning is based in a real-world context, assessments too should be based in a similar environment (Simon & Gregg, 1993) where students get ample opportunities to enhance their learning, imagination, creativity, problem solving and other life skills in their unique ways. Traditional assessments with its benefits also have many challenges like its overemphasis on memorization, neglecting holistic learning as well as the huge stress and anxiety that it brings along. These assessments are also heavily teacher dominated with less emphasis on the real-life application of the learning. Thus, if learning is based in a real-world context, assessments too should be based in a similar environment where students get ample opportunities to enhance their learning, imagination, creativity, problem solving and other life skills in their unique ways. It suggests that the assessments and instruction must be integrated (Shepard, 2000).

These challenges highlight the urgency of a more learner-cantered and inclusive assessment practices that would reinforce active participation and faith in the process of assessment. The assessment reforms would cater to overcome the challenges that are currently being posed by the traditional assessments. Along with the regular term end examination as a summative assessment, formative assessments should focus more on how children are progressing over time, minimizing the reliance on standardized testing, and giving more importance to learning experiences (Hargreaves, 2005). This would mean that the documentation and evidence of achievement are also important to be gathered systematically that can map the learning of students over time. For this purpose, formative assessments (Black & Wiliam,1998) such as portfolios, self-assessments, and peer-assessments are a necessary shift we need to undergo. Reforms would also mean focussing on not just the knowledge and comprehension but also on the skills and core competencies that are mapped with the developmental milestones for the relevant age group learners. Every learning outcome should be able to assess learning progression through a holistic assessment system including cognitive, socio-emotional, and physical development, also with the record of learning progressions (Torrance, 2007). This would also imply that our assessments for the foundational years should be more embedded in play-based activities (Ali, et al. 2018), where children get to participate in many activities like role-playing, puzzles, play-based and project-based assessments, so largely performance based (Darling-Hammond, 2014). Such comprehensive assessments would give an opportunity to assess our students using real-world contexts while also developing some valuable life skills.

Literature Review

Several studies highlighted the need and importance of regular, periodic and need based transformation in school curriculum, teaching-learning practices, and assessment formats. Recent studies reviewed in this area, highlighted the key shifts in the assessment practices in education and the emerging trends to be considered for designing better evaluation framework.

Shift from Traditional to Modern Assessments

Due to openness in education and emergence of advanced technology tools, whole education system witnessed a transition, especially after COVID-19 pandemic. If we focus on assessments in elementary education, recent literature shows the shift from traditional ways of rigid and pen-and-paper based assessments to innovative alternatives focusing more on formative, performance based and skill-based assessments. There are major challenges that make the traditional practices outdated, as there are challenges in test-security and fair implementation. The standardized traditional assessments lack in providing opportunities to assess creativity (Greer et al. 2021), and are more inclined to test lower order thinking skills, having no place for higher order thinking (Carroll, 2013). Due to bias in traditional system and limitations in standardized tests, Hardy & Lewis (2020) advocated culturally responsive assessments for the linguistic diversity. Social-emotional assessments are also found to get attention in modern education that measure non-cognitive skills such as collaboration, empathy, and resilience in children for understanding learners holistically (Jones & Kahn, 2017). Several studies emphasized conducting competency-based assessments supporting skill development approach aligning with the skills required for handling real-world situations (Leutner et al., 2017, O'Reilly et al. 2022, Tobin & Tippett, 2021).

Research emphasizes on the importance of integrating the assessments in regular teaching learning. Formative assessment continually improves student learning (Pellegrino, 2017). Studies such as those by Andrade & Heritage (2019) highlight improved engagement due to formative assessments, that will allow students to know about their progressions. Black & William (2020), reiterate the importance of formative assessments to foster learning with the feedback loops to guide student progression. Effective formative assessments not only provide information on learning but also help teachers to get minute-to-minute, day-

to-day feedback to take decisions regarding teaching (William & Leahy, 2024), and can take many forms such as student reflections, student feedback etc. (Kingston & Nash, 2011).

Major shift was observed towards personalized learning and assessments considering the diversity among learners and their individual differences. Thurlow & Lazarus (2021) provided insights for new assessments in the form of alternative assessment models promoting inclusivity and equitable assessments, along with the assessment modifications (Thurlow & Kopriva, 2015) for students having disabilities. Project based assessments are innovated promoting peer learning as well as peer assessments allowing meaningful learning in remote education (Benton & Kleitman, 2021). Research points out the alterations in assessments, providing opportunities for continuous improvement in learning through pedagogical differentiations (Kanellopoulou & Darra, 2022) and allow teachers to get more feedback on achieving their learning objectives (Flaherty & Hackler, 2010). A meta-analysis of 18 studies on portfolio assessment as a tool for primary school students shows a positive impact on their academic achievement. Portfolio assessments demonstrate student progression over time (Doğan et al., 2024). These assessments contribute to 21st century skills assessment. Portfolios are also found effective for self-reflection and promoting learning (Hj. Ebi et al., 2020).

There is a clear indication from this discussion that flexibility is the key factor to improve today's assessments, to provide more opportunities for teachers to adjust depending on the student needs and unusual situations as in pandemic (Looney et al. 2021). The integration of technology in assessment has taken multiple forms as technology integrated assessments and even AI based formative assessments (Shu & Gu, 2023). Several other studies on modern assessments also supported the need to transform assessment practices in elementary as well as other higher levels of education based on the local needs and global trends.

Modern Assessment Methods

With the changing needs and forms of education, reforms in today's school education reflect inclusion of reflective and learner-centred approaches of student assessments. Unlike traditional memory based summative assessments, a key component of the new system of assessment is formative assessments, as an integral part of teaching and learning (Yan & Brown, 2021). Use of this approach contributes to more autonomy and motivation for learning among students (Leenknecht, et al., 2020). It was stated that the characteristics of assessment fosters learning motivation highlighting the significance of assessments for improving learning (Bui & Nguyen, 2024). Recognizing learner needs and diversity the new assessments are inclusive, rigorous, and responsive (Ansorger, 2021). Reforms have brought a shift to consider the learner feedback, their participation in assessment tasks and self-regulation, that plays a mediating role in quality of assessment (Ibarra-Sáiz, et al. 2020). Innovative and comprehensive assessment methods are more integrated with learning as compared to the traditional assessments.

Modern assessments are technology based providing engaging and attractive environments and gives importance to problem and project-based assessments (Meylani, 2023). Instead of focusing solely on academic knowledge, modern assessments include alternatives to assess students' attitude and behaviour (Puad & Ashton, 2020), considering student perception in the teaching learning and assessments (Mathur, et al. 2024), making use of digital portfolios, peer assessments and simulations (Aliah, et al. 2023), using rubrics for self-assessments (Andrade & Du, 2019), use of AI for assessments (González-Calatayud, et al. 2021), and digital assessments on Google classroom providing simple, practical, and flexible assessment opportunities for teachers (Choirunnisa & Mandasari, 2021). Thus, the new assessment methods are evolving in the post-Covid era of educational transformation, bringing in more openness and flexibility in assessment practices and reducing overdependence on examination-oriented assessment (Yan & Brown, 2021). Research confirms that teachers use a wide range of tools and methods of evaluation according to student preferences to complement learner progress (Fuentealba, 2011) and are showing positive attitude towards the modern assessments (Saira, et al., 2023).

Innovative Assessment Frameworks

Assessment framework is a structured approach for guiding educators to conduct assessments with the purpose, following a specific procedure. In the past, many researchers and educationists have presented and implemented assessment frameworks for different purposes, at different educational levels, as well as online and offline modes of instruction, but with the sole purpose of explaining how assessments can be better and how they help teachers to know about learners and their learning (Stiggins & DuFour, 2009, Gibbs, 2010, Abatihun, 2020, Monteiro, et al., 2021). Assessments framework creates opportunities for teachers to provide creative ways of 'what and how' a child runs, as stated by Bourke & Mentis, 2014. They introduced an assessment framework with an integrated approach for inclusive education, with diverse assessment approaches. A process-based assessment framework for technology education was developed by van Niekerk et al. (2010), which includes - outcomes, content, and assessment methods that serves as a roadmap for technology teachers to assist them.

Technology Assessment Framework (TAF) was presented by Compton et al. (2003), as an effective tool for teachers to support and guide the translation of technology in the curriculum at New Zealand, with the purpose of development of understanding of assessments in technology education, based on socio-cultural theory. The Edu-Metaverse model includes multimodal interactions and AI enabled teaching and assessments to achieve learning outcomes for core literacy (Shu & Gu, 2023). In one of the studies conducted by Widayanti et.al. (2021), an assessment framework was designed for the universities using blockchain technology for improving the quality of education. Multimodal assessment frameworks encourage students to demonstrate their learning through various media tools such as videos, interactive content etc. E-assessment framework emphasized the need for organizing assessments relevant digitally based on the needs (Bearman et al. 2022). The assessment model including - Performance, observation, self and peer assessments, and journal of teacher's records found to be effective for assessment of knowledge, skills, and attitudes in elementary education (Maba & Mantra, 2017). A kindergarten assessment framework was developed by integrating contemporary assessment practices for the kindergarten classrooms suggesting significance of ply-based assessments (Pyle et al., 2020). This framework will help teachers to improve student engagement and holistic development (Parker et al., 2020).

Many other relevant studies were found presenting the assessment framework for improving learning, but majorly in higher education. It was observed that they are widespread, including specificity in use regarding various subjects, knowledge domains, mode of learning, etc., and reiterated that developing comprehensive assessment practices is essential to guide teachers to understand, select. and implement appropriate strategies to understand how students are learning and their learning progression. But the recent literature lacks the consistent and comprehensive framework at elementary level, that can be referred by the teachers to modify their assessment practices and improve learning.

Holistic Assessment Framework (HAF)

As was the case across the world, the Covid-19 also had its impact in schools across India, especially the age group from 3 to 8 years. The school drop-out percentage had tripled during those difficult times in this age group for multiple reasons. Moreover, while the higher grades eventually shifted to the online mode of education, the children in this age range were unable to optimise this medium as parents and educators were concerned about the excessive screen timing they would be exposed to. Also, the attention span of this age group is too less to engage them for long hours and as a result the students lose out on some crucial learning.

Designing and Development of Holistic Assessment Framework (HAF)

Theoretical foundation: Both Western and Indian philosophers, psychologists, thinkers, and educators have shared insights into the importance of exploration and play, art, rhythm, rhyme, movement, and active participation during the early years of children. Constructivism as a theory proposes that learners actively construct their knowledge through their experiences instead of passively receiving information (Piaget, 1952). Proponents of this theory emphasize that learners build upon their prior knowledge and interact with their environment to form new understandings. In the context of the present research, it can be said that learners evolve in all domains – cognitively, emotionally as well as physically, through the engagement they have, and so it is also necessary to have a multidimensional assessment so that the learner's progress can be assessed in all domains (Vygotsky, 1978). Learner Centric approaches in education are those that prioritize the needs, strengths, and interests of the students, thus making them the focal point in the educational process (Weimer, 2013). In the present research too, assessments have been tailored in a manner that would align with the unique learning journey of the students. The HAF proposed in this paper caters to diverse learning paths and provides meaningful feedback to each learner.

This way we are transforming assessments from teacher directed to student driven. Tomlimson, (2001) worked on differentiation stressing the importance of adapting teaching and assessment methods to meet the varying needs of students. The framework as designed in the present research is multidimensional and recognises the diverse strengths and improvements needed. This ensures that all students are not just assessed comprehensively but also fairly. Play is recognized as the most essential component in early childhood education. The present framework incorporates a mix of traditional pen-and-paper tests as well as playful assessments such that the naturalistic and interactive environment is created. This framework is based on the work of educators like Friedrich Froebel (Dar, 2020) and Jean Piaget (Piaget, 1952) who had advocated to promote learning through exploration, experimentation, and discovery. Thus, the Holistic Assessment Framework in this research, looks at assessment with a fresh perspective while providing a robust lens to evaluate the framework in the case study involving elementary school teachers.

Policy Recommendations

Promoting holistic and competency-based learning, especially in the foundational stage, has been one of

the aims of the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF). The NEP has provided with stage – specific competencies that may guide curriculum development and assessment practices. This policy emphasizes the need to track the interim learning outcomes as competencies are the long-term achievements. This will ensure that the needs of the students are continuously met. The NCF which has been derived from the NEP further focuses on having a comprehensive assessment system so that the student development can be supported across multiple domains.

Other frameworks like the Vidya Pravesh and the National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) Bharat Mission, focuses on ensuring foundational literacy and numeracy by Grade 3. While Vidya Pravesh stresses on a play-based approach to address the learning gaps in early education, NIPUN Bharat Mission emphasizes continuous assessment to track the progress of learners. Further the NEP also recommends the Holistic Progress Card (HPC) such that it provides a multidimensional view of every learner's progress across all domains. Thus, all policies direct schools to follow an assessment pattern that would foster holistic development and ensure that assessments not only serve to quantify learning but it provides a wholesome support and guidance for every student to develop.

Nature of HAF

The key features of the new HAF are as follows –

Innovative framework: This innovative assessment framework is a 360-degree, multidimensional framework, that reflects the progress as well as the uniqueness of each learner in the cognitive, affective, and psychomotor domain. The framework includes application of modern theories of learning and assessments, holistic approach, multiple dimensions, play-based education and innovative, alternative, tailor made assessments.

Principles: HAF followed to design the assessment framework mainly based on learner centricity, constructivism, personalized assessments, differentiation, and authentic assessments.

Assessments: Varied assessment methods and techniques are included in the framework such as observation, analysing artefacts, portfolios, storytelling, self and peer assessments.

Learning Dimensions: Knowledge, skills, and attitudes are integrated in the framework. The individual elements of each dimension are mentioned in Figure 1, indicating the focus on holistic approach.

Achievement levels: Th achievement was captured using four levels based on the performance of a child in the assessment such as – A: Advanced, W: Well versed, P: Progressing, and B: Beginner. These levels were used for reporting in a progress card.

Structured approach: This framework is a comprehensive outline of multidimensional holistic assessments process to be followed by teachers of elementary school regarding planning and conducting assignments. Based on – (i) Needs analysis, (ii) Curriculum analysis, (iii) National policy recommendations, (iv) Post COVID scenario of education and (v) School expectations.

Teacher training: The teachers for grade 1 were trained through the structured training programmes on 'HAF: Why, What and How to implement it'. After the training the teachers were guided and monitored throughout the year, during the implementation of HAF in their respective classes. This handholding helped to get their reflections on their assessment practices, problem solving and motivation to continue implementing HAF.

The Holistic Assessment Framework was designed and developed by the school team. The elements of the framework are presented in Figure 1.

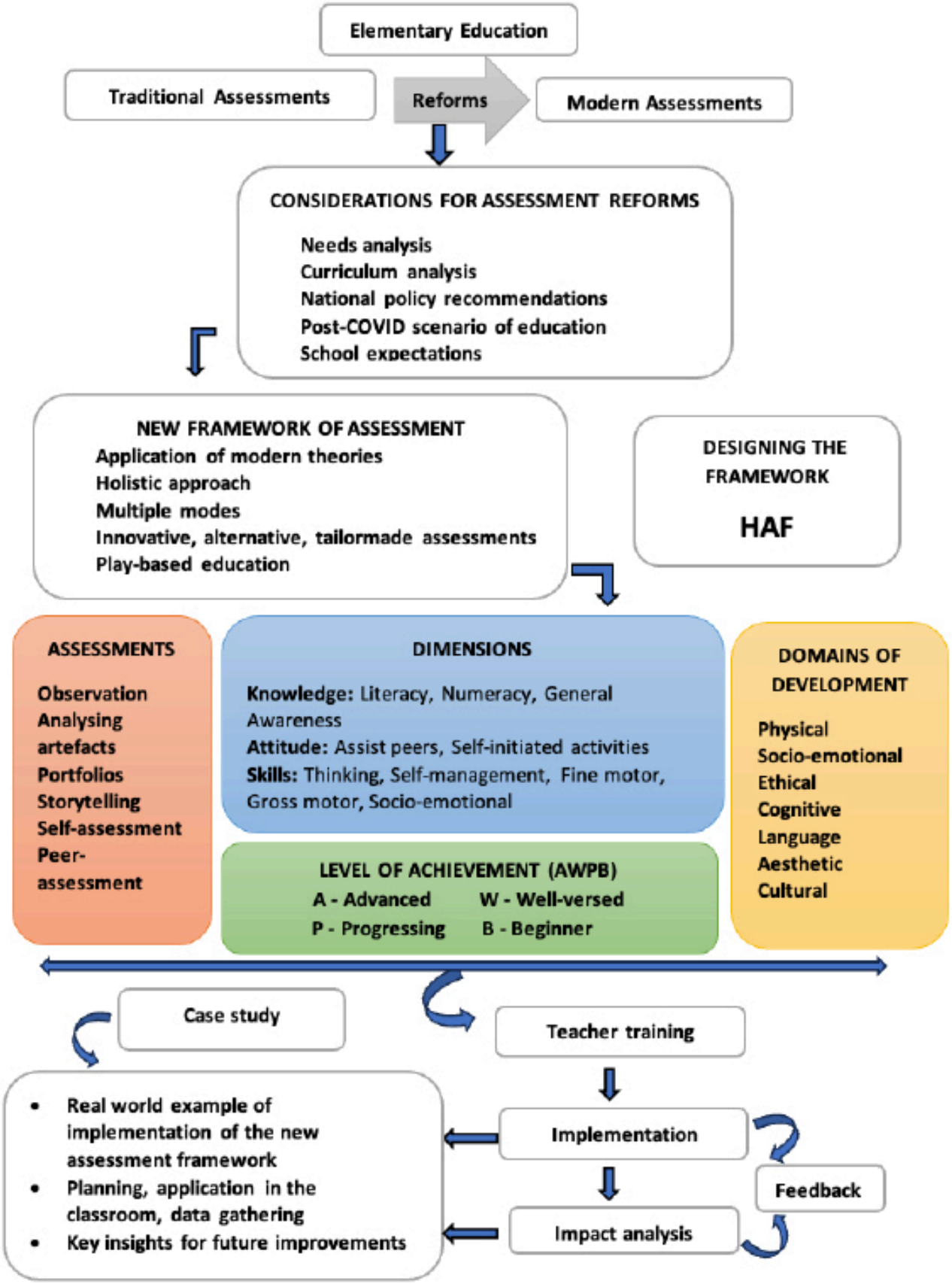
The Context and Research Questions

After the development of the HAF, elementary school teachers were trained by the school director on implementation of HAF in classrooms. The programme was designed to train teachers on –

- What is HAF, why it is needed
- Understanding the components of HAF
- Exploring how to conduct effective formative and summative assessments
- Understanding the principles of learner centred assessment, differentiation, multidimensional and holistic assessment
- Use of activities for assessing knowledge, skills, and attitudes
- Using assessments for giving feedback
- Keeping assessment records

Following the training the teachers implemented the HAF in their respective classrooms, with continuous follow-up, mentoring and problem solving on the issues faced by the teachers in implementation. These reflection sessions were helpful for the teachers to gain confidence and clarity to implement the assessments effectively.

Figure 1:
Holistic Assessment Framework



The primary focus of developing the HAF was to improve the quality of assessments in elementary education providing meaningful evaluation of student learning. After the implementation, it was essential to know the applicability of the HAF to determine whether it effectively serves the intended purpose. The purpose of knowing the applicability of the framework is to address educational outcomes, supporting holistic development and adapting to innovative, alternative, tailor made multidimensional assessments. In this regard the research explores the practical application of implementing the HAF in primary education. The research questions guiding this study are -

RQ1: How do teachers perceive the traditional assessments and the challenges they faced in the traditional assessment framework?

RQ2: What are the teachers' reactions and attitudes towards the HAF?

RQ3: What are the experiences of teachers in implementing the HAF in Grade 1?

RQ4: From a teacher's perspective how has the HAF influenced students and what was the impact of the HAF on learning?

RQ5: What reflections do teachers have on the use of the HAF as transformed assessments?

Methodology

A Case Study: Implementation of the HAF on Grade 1

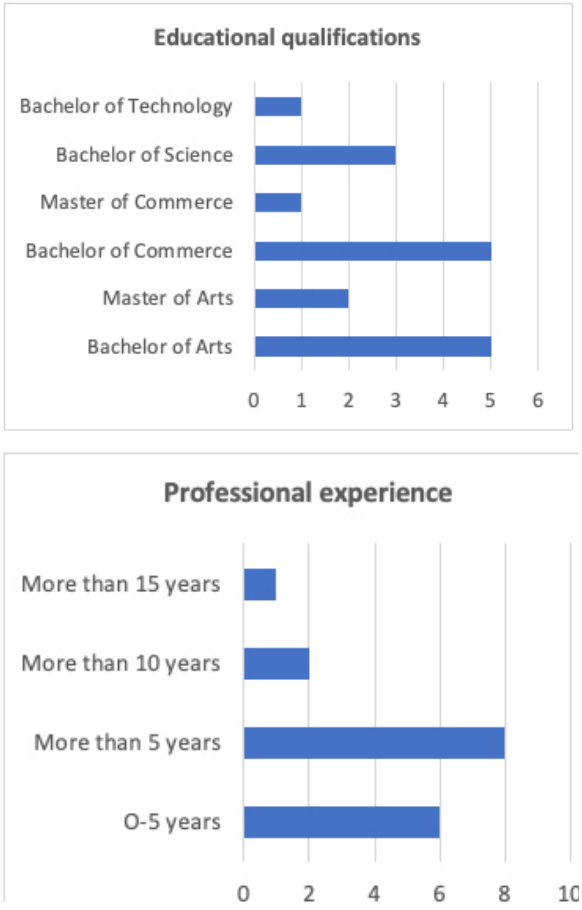
This is an evaluative case study focusing on assessing the applicability of the HCF. Participants were asked to reflect on their experiences using semi-structured interviews, through their feelings, opinions to evaluate the framework applicability.

School Site and Participants

The school where this research was conducted is in the heart of the city of Pune in the State of Maharashtra. This is a private school providing education to students from Grade 1 to Grade 10. This is a private school in which the education was transacted as based on the NEP 2020, since June 2022 in the Foundational years. This school has an approximate strength of 1800 students with approximately 45 students in each division and a teacher student ratio of 1: 22. This school follows the Maharashtra State Board curriculum and in the Foundational years where the focus is on the three developmental goals comprising of - Foundational Literacy and Numeracy, Health and Wellbeing; and, Effective Communicators and Involved Learners. While NEP emphasizes the 5-step pedagogy known as Panchaadi – Aditi, Bodh, Abhyas, Prayog and Prasar, at this school a similar 5 step approach: Provocation (prior knowledge assessment), Concept building, Reinforcement, Assessments and Reflection is implemented. To enhance pedagogy, self-designed workbooks and an integrated curriculum aligned with the United Nations 17 Sustainable Development Goals is considered. The diverse assessment methods used in this school extends beyond what is being used traditionally and incorporates methods like portfolios, presentation, performance-based assessments, anecdotal records, self and peer assessment, accelerated learning programmes and using a Holistic progress card thus making assessments a lot more fun, engaging, and forward-thinking.

The teachers who were trained in conducting assessments using the HAF were selected as participants. Total 17 elementary school teachers teaching Maths, English, Science, Social Science, Hindi (National language), Marathi (Local language of the State), and Music to Grade 1, were willingly participated in the study. The educational and professional profiles are presented in Figure 2. The teachers were coming from all the streams having bachelor's degree in Arts, Commerce and Sciences, and some of them had Masters, along with their Teacher Training degrees. Professionally Most of them have worked for more than 5 years, while some are recently joined the teaching professions (less than 5 years) and others are having 10 plus years of experience of teaching in school.

Figure 2:
Educational and professional profile of participating teachers



Data Collection

Semi-structured interviews (SSI) were conducted with the purpose of understanding the applicability of the HAF with respect to the transformation from traditional assessments to innovative multidimensional, holistic assessment framework. The interviews aimed to capture teachers' insights on using HAF and impact on learning. SSIs were conducted conversationally with one participant at a time (Adams, 2015) by one of the researchers over the period of one month after the completion of implementing the HAF over the full academic year. A systematic process for designing and conducting the interviews was followed to get rich and relevant data. The interview guide was developed, including the open-ended questions to be asked based on the pre-determined themes framed with the purpose of determining the applicability of the new HAF. Informed written consent was taken from all the participants before the actual interview schedule along with the consent to conduct data collection from the school authority. The purpose of the study, role of the teachers, confidentiality and willingness for participation was ensured. Suitable time and location were decided to conduct face-to-face interviews. Audio recorder was used for recording the interviews with the permission from all the teachers. Along with the transcripts, the written notes taken at the time of interviews were also used to capture the data. The data were then analysed in the context of the pre-determined themes.

Data Analysis and Findings

A hybrid approach of Inductive and deductive coding was used to provide meaningful contextualization and clarity about the HCF. Deductive coding was performed using the known predetermined themes and an inductive approach was then used to capture additional themes that emerged during the analysis of the qualitative data. The data captured the perspectives of teachers regarding implementation of HAF and the new assessment activities in their classrooms, through a series of reflective open-ended questions, in the form of semi-structured interviews. In a data analysis process, the deductive coding was performed with the help of - creation of evaluation criteria, data reading, applying the predetermined criteria codes to the data and analysing the coded data. Further the data was analysed using inductive coding through the process of - identifying emergent themes, getting context specific insights by reading through the data. It involved identifying the codes, patterns, and themes as they emerge (Miles et al., 2020). For each predetermined theme the codes were generated and presented in the tables explaining the meaning of the codes and the respective examples. The experiences and views of the teachers are analysed as follows -

Using Traditional Assessments before HAF

Deductive analysis: In deductive coding we applied a predetermined set of themes based on the HAF. The respective codes, definitions and data examples are presented for the predefined theme 'Using traditional assessments before HAF.' The analysis is presented in Table 1 below.

The responses reflect a general dissatisfaction among teachers for the traditional assessment system used at Grade 1 and 2. They highlighted the monotonous nature of the assessments conducted earlier, relying heavily on the standard tests, focusing majorly on the recall based theoretical testing. Teachers stated that the holistic approach was missing and the traditional assessment did not include important skills like creativity, problem solving, and communication.

Table 1:

Deductive analysis for the theme 'Using traditional assessments'

Codes	Definition	Data examples
Monotony	Teachers' perception of repetitive or uninspiring assessment tasks	"The assessment was monotonous for teachers as well as the students"
Limited scope	The focus on theoretical knowledge, recall and standardized testing	"Traditional assessments which we used were primarily focused on evaluating students through standardized tests" "They were limited to theoretical learning, based solely on retention and reproduction of coursework provided"
Major focus on cognitive domain	Emphasis on academic performance, less on other skills	"These were focused more on the academic, subject-wise performance of the student" "These were mostly centred on academic performance, particularly in subjects like mathematics, reading and writing"
Lack of holistic development	Lack of formal assessments on socio-emotional aspects and creative skills	"They lacked a broader view of skills and communication, which are essential for holistic development" "It couldn't grade students on their skills and attitude which is very important aspect of mental development"
Test centric assessments	The reliance on exams in the form of quizzes and tests to assess students	"Recall and demonstrate knowledge through pen and paper tests" "Traditional assessments focused on multiple-choice questions, such as true/false, tests, short answers, FIB"

It resulted in limited scope of capturing students' learning, as the assessments were largely limited to cognitive domain.

Inductive analysis: We derived codes other than the predetermined codes, from the thorough data reading. The codes emerged through the inductive analysis are:

1. Need for holistic assessments: Teachers desire for a more comprehensive system for assessment that includes non-academic skills along with the academic skills and knowledge. They think that the new assessment framework is useful for all students.

2. Benefits of the new assessment system: Teachers commented positively about the holistic assessment framework as compared to their experiences with the traditional assessments.

The data revealed the need for holistic assessments not merely focusing on theoretical knowledge, but demanding more focus on social, emotional, and practical skills. Positive mentions about HAF confirms that the teachers found value in the new assessment framework as compared to the traditional assessments.

Challenges Faced While Using Traditional Assessments

Deductive analysis: The analysis for the predetermined theme as the challenges faced by the teachers while using traditional assessments yielded major codes are presented in Table 2, as below.

The responses indicate that in the traditional assessments teachers faced many challenges as these assessments were based on memorization and not considering student centric approach. The assessments were teacher structured neglecting diverse learning styles, pressurizing students to perform in the assessments. Administrative challenges were also mentioned.

Inductive analysis: The emergent codes obtained through the inductive coding are:

1. Time management difficulties: Teachers responded that they were struggling to manage time for the assessments due to other administrative responsibilities due to their rigidity like conducting each subject paper every day. They felt it was tiring to manage conducting assessments and regular teaching.

2. Lack of engagement and motivation in assessments: The teachers felt difficulty in keeping students engaged and motivated while conducting the assessments due to its fixed nature. It was difficult to make students take interest in completion of the test papers as they get bored sometimes before the exams.

3. One-size-fits-all approach: Assessments that do not consider the diverse learning styles of students are challenging. Teachers felt that the one-size-fits-all approach was followed in traditional assessments with little scope for out-of-the-box thinking.

4. Overemphasis on grades: A few teachers responded that assessments primarily focus on grades and not on holistic learning, highlighting the limitations of traditional exams overemphasizing marks and grading than holistic learning.

This inductive analysis brings out the limited scope of traditional ways of conducting assessments earlier in which teachers face time management difficulties, keeping students engaged and motivated during the assessments. Overemphasis on marks of the students and less importance to assessing broader skills highlight the inaccuracy.

Table 2:
Deductive analysis for the theme 'Challenges faced in traditional assessments'

Codes	Definition	Data examples
Focus on memorization	Focus on rote learning and lack of conceptual understanding	"The traditional assessments have little scope for out of the box thinking" "Teachers do not get to know child's concept clarity due to rote learning system"
Limited assessment scope	Inability to assess practical oriented, no-academic, critical thinking skills	"I found less of real-world application in the assessments" "Incomplete picture of students' growth in all areas"
Teacher centred	Rather than student centred activities, assessments are structured based on teacher's preferred inputs	"Exams were earlier teacher centred" "Traditional assessments do not account for diverse learning styles"
Burden on students	Stress or pressure experienced by students for the exams	"Students were under pressure" "Quite boring for them to learn and study all before exams"
Administrative challenges	Issues of converting marks to grades, adhering to guidelines, and paperwork	"Maintaining records according to State Board guidelines" "Converting the marks into grades"

Highlights of The New HAF

Deductive analysis: Teacher responses were analysed using deductive coding for the predetermined theme 'highlights of the new HAF' as presented in Table 3.

Several key features of HAF were highlighted by teachers. Prominently the holistic nature and scope for skill development was appreciated. They opined that the framework allowed them for broader understanding of students through assessments in skills and attitude along with the academic evaluations. Another standout feature was ongoing continuous assessments focusing on personalized assessments, and practical applications.

Inductive analysis: The inductive coding emerged the following codes:

1. Parent-Teacher communication: Improved scope for communication from teachers with parents on students' progress was recognized by the teachers as a differentiating feature. HAF helped them in better communication with parents of children in Grade 1, to inform them of diverse areas of child's development.

2. Student empowerment: They found that students become active learners, gaining confidence. They can get opportunities to explore more in-depth about the topic.

3. Enjoyable assessments: The new framework changed the perception about assessments, as fun activities, engaging them in assessments and reducing burden.

The assessments were perceived as enjoyable activities for students, empowering them to gain confidence. Similarly, the data revealed that the new system provided more opportunities for reaching out to parents to communicate their child's learning progression.

Implementing HAF in Grade 1

Deductive analysis: We performed deductive coding for the data obtained on the predetermined theme 'Implementing the HAF.' The codes, definitions and examples are presented in the following Table 4:

The teachers' experiences of using HAF reflect a balance of positive aspects and challenges faced by teachers initially. Many teachers appreciated the holistic nature of assessments, providing a complete picture of development in children beyond just academics. The time incentive nature and the need for additional effort were key concerns.

Inductive analysis: The emergent codes obtained through inductive analysis are as follows –

1. Personalized learning: The teachers experienced the opportunities for personalised learning. Teachers stated that the framework helped them to understand the child, their strengths, and weaknesses. The framework allowed easy tracking of each child's progress on an individual basis.

2. Enjoyable Learning: Teachers emphasized that the framework made the learning process fun for students. The HAF makes the assessments enjoyable without causing any burden.

3. Emotional and social development: Teachers focused on non-academic aspects of student progression. The teachers expressed that the HAF helped them in evaluating the social, emotional, physical, and creative development of the students.

4. Adaptation and flexibility: The efforts required to shift from traditional assessments were seen as a hectic task initially. The adaptation was challenging.

Personalised learning emerged as a significant code, with teachers expressing their appreciation for the framework. Another recurring theme was enjoyable learning as the new assessment framework made the process more engaging for the students.

Students' Response to the HAF

Deductive analysis: We applied a predetermined theme 'Students' response to the HAF' to analyse responses using deductive approach. The relevant codes are presented in Table 5.

The analysis highlighted that student responded positively to the new assessment framework, showing high engagement, excitement and they were stress-free. The continuous and integrated nature of assessments help them enjoy assessments conducted in different ways.

Inductive analysis: In inductive coding the codes emerged from the data without the predetermined theme are found as follows –

1. Skill development: Under the new system teachers found development of academic and other critical skills in students. It is found to be in the form of observation skills, listening skills and reading and writing skills, and overall learning skills.

2. Invisible assessments: This code emerged from the responses of teachers implementing the HAF, stating that these ongoing continuous assessments were seamlessly integrated that allowed students to focus on learning without realizing they were being evaluated. Children were not aware about exams and a fixed time table.

3. Confidence building: HAF helped students gain confidence. Teachers expressed that children were very confident while giving answers, they appeared more confident for the new projects, and enjoyed stress-free and more flexible time frames.

Table 3:
Deductive analysis for the theme 'Highlights of the new HAF'

Codes	Definition	Data examples
Practical applications	The use of practical, real-world tasks in assessments	"Gives overall review of how well student has comprehended the topic, skills acquired and where the students can apply the gained knowledge in daily routine" "Use of knowledge in the real world"
Personalized assessments	Scope for customizing assessment activities based on individual students' needs	"It is personalized, catering to considering individual strength based not only on academic skill but also other skills" "It has encouraged continuous growth with individualized feedback"
Holistic nature	Inclusion of cognitive as well as social, emotional skills	"It includes the progress record of the child in every aspect which includes overall development like social, emotional, self-reflection, creativity and communication skills" "It focuses on comprehensive development of students encompassing all domains of learning rather than academic achievement"
Continuous assessments	Ongoing rather than high-stakes nature of assessments	"Students are assessed more on class or peer activities, and daily observations where they are active agents rather than being passive learners" "The assessments didn't burden the students but was ongoing, allowing them to demonstrate their abilities in a playful environment"
Skill development opportunities	Focus is on skill building, and not only on knowledge acquisition	"The unique grade descriptors reporting overall achievements include knowledge, skills and attitude" "It captures the progress of the child where students become confident, creative and develops questioning skills"

Table 4:
Deductive analysis for the theme 'Implementing the HAF'

Codes	Definition	Data examples
Holistic assessment	Inclusion of knowledge, skills, and attitude in assessments	"Helps understand students' progress beyond test score" "Shifting my approach to evaluate students more holistically. For knowledge, I assessed how well students understood the content through different activities. For skills we observed how they applied what they learned in practical tasks, group activities, and projects"
Student engagement	Engagement of students due to new assessment framework	"The entire experience was engaging and enriching for students" "We prepared assessment sheets in such a way that children will enjoy the process rather than feel bored"
Teacher satisfaction	Teachers' feelings about implementing the HAF	"As a teacher I feel satisfied since the new assessment framework brings out the essence of the learning objectives based on learning outcomes" "It's been a quite good experience; students do not feel pressure of examinations"
Time and effort	Time and efforts required for adaptation of the framework	"It is very time-consuming, but I think the assessment framework works well." "Balancing personal attention for students and managing creative assessments with large groups is difficult"
Challenges	The difficulties encountered by teachers during implementation of HAF	"Adapting new system and setting assessments" "Initially it was a hectic task, but later, got to know that the framework is designed meticulously"

Table 5:
Deductive analysis for the theme 'Students' response to the HAF'

Codes	Definition	Data examples
Student Engagement	Levels of interest and participation in new assessments	"Students love the assessment as it allows them to experience new life skills... they love to play and understand the concept through play-based learning" "Students responded positively as assessments reflected their interest and real-world application"
Learning outcomes	Impact of the assessment on knowledge, skills, and attitudes	"Students did well in reading and listening skills but struggled with writing" "They appear more confidently to these assessments" "The continuous assignment process allowed students to focus on learning without realizing they were being evaluated"
Stress of exams	Changes in anxiety due to assessments	"Students were having fun and did not face any stress due to exam fear" "The most rewarding aspect of this continuous assessment approach is that it takes place in a relaxed, stress-free environment"
Different forms of assessments	Student response to different formats in which assessments conducted such as play-based, practical etc.	"Students enjoyed assessments, especially when they were given choices" "Instead of worrying I found them excited and keep forward to new ones"

The inductive codes represented the increase in confidence and stress-free assessments resulting in assessments as an enjoyable activity. The theme of invisible assessments is unique, which contributed to a relaxed positive learning environment in place of rigidly planned formal, knowledge based, traditional assessments. Teachers also observed growth in specific skill sets.

Impact of HAF on Students' Learning

Deductive analysis: The deductive coding applied to data for the predetermined theme 'Impact of HAF on students' learning' as compared to the traditional system for assessments, yielded the following codes, presented in Table 6.

The responses indicate that the HAF has a profound positive impact on several dimensions of student learning. The teachers observed the impact of the new framework in the form of increased engagement, more self-development, holistic development, building conducive stress-free environment and alignment of learning with the real-world.

Inductive analysis: The codes emerged during the inductive analysis are -

1. Parental involvement: Feedback and guidance from parents was observed due to increased opportunities for communication. When communicated with parents regarding the lenient approach towards learning, reading, and writing, they supported their child, and the children did well.

2. Equity in assessment: Few teachers appreciated the flexibility of assessments to include diverse student strengths. If a student is excellent in oratory skills but not in writing, they can still acquire good grades. It is the best way to assess the conceptual clarity of the child.

3. Relevance to the real-world problems: The assessments related to the real-world issues, and children could relate to the practical problems.

From an inductive perspective, the important themes surfaced. HAF is found to be focusing on individual strengths of students providing equity in assessment. The framework provides assessments that are relevant to real-world issues. Support in the form of parental involvement is also observed in the learning process.

Reflections on the Transformed Assessments

Deductive analysis: In the deductive analysis the analysis evolved several codes for the predetermined themes 'Reflections of teachers on the transformed assessments" as suggested in the HAF. The analysis is presented in Table 7, including the codes and respective examples from which they are drawn.

From a deductive analysis the teachers are found to have expressed positively on the meaningful assessment objectives and significance of student centric approach. They recommended some improvements to improve the quality of the framework and stated the challenges they faced during the implementation of the HAF.

Inductive analysis: The emergent codes are presented below –

1. Teacher empowerment: Implementing the framework provided many learnings to the teachers during the process of designing and grading diverse assessments.

2. Long-term impact on students: teachers reflected that the new framework shapes students' future attitudes and life skills. They felt that in the long run these assessments will help students to be better individuals with good social values.

3. Feedback: Regular feedback should be provided to the parents at least once in two months to practice continuous improvement in students.

Both the deductive and inductive analysis of the HAF significantly impacted student learning, engagement, and holistic development. While there are some challenges like time management in large classrooms, writing skills development, faced by teachers, the framework was largely perceived as beneficial by both teachers and their students because of its key features as holistic, learner centric, stress-free, skill based, practical, continuous, and engaging assessments for better learning.

Discussion

The successful development and implementation of the HAF presented in this study highlights the shaft of assessments at elementary level, from traditional to multidimensional, holistic assessment. This framework can be used as a reference framework for designing the assessments based on the modern learning theories, aligned with the national policy and curriculum. Along with the cognitive, knowledge-based assessments this comprehensive framework also includes skills and attitude-based assessment, aligning with the recent research. The HAF is supported by emerging findings from the research that put emphasis on formative skill-based assessment to improve continuous learning. The study conducted by Black & William (2018) support formative assessments like the HAF which include formative assessments of different kinds, to ensure continuous learning and feedback for the teachers about students' progression. Present study also resonates with the global perspective on assessments with respect to social emotional skills and creativity as suggested by OECD's Learning Compass 2030 (Steponavičius et al. 2023).

Table 6:
Deductive analysis for the theme 'Impact of the HAF'

Codes	Definition	Data examples
Practical aspects of learning	The use of learning in real-world, in the practical context	"Children could relate to practical problems and issues" "Students demonstrated a better understanding of concepts through practical tasks and groups"
Stress free environment	The shift from anxiety levels to joyful learning	"Compared to traditional assessments students do not have the fear of exams" "Students did not have fear of exam,
Interest in learning	Students' involvement and motivation in learning	"The backward design model helped students learn better and retain their interest in learning"
Holistic development	Development of both knowledge and skills	"The detailed assessments suggested in the framework helped the teachers and students to understand their performance across academics, skills and attitude" "It helped view a customized learning journey in critical thinking, reflecting, problem solving and social-emotional skills"
Self-development	Confidence, Creativity and Skill building among students	"It gives more confidence to the kids and impress their leadership qualities" "The assessments helped students come up with different ideas and perform creatively"

Table 7:
Deductive analysis for the theme 'Reflections on the transformed assessments'

Codes	Definition	Data examples
Meaningful assessment objectives	The clarity and purposefulness of assessments	"The assessment has meaning; the objectives tell us exactly what we are assessing" "It is a detail analysis of a student"
Student centric assessments	Emphasis on overall development of students	"These assessments are skill based and student centric" "Using the framework offers more comprehensive view of student development"
Student engagement	Positive impact on student participation in assessments and thus in learning	"Play based assessments are ideal for foundational year students" "The assessments are authentic and conducted in a natural environment"
Challenges/ Improvements	Further enhancement in the assessment process is needed, challenges are to be considered.	"Some assessments can be informed to the children in advance to allow them to prepare better" "Streamlining the assessment process and automating parts of it could reduce time spent on grading"

Moreover, HAF is supported by emerging researches on learner centric assessments, that caters to the higher involvement of learners. The study conducted by Zulkifli, A. F. (2019), allow teachers modify learning activities, also conduct alternative assessments, and demonstrated effective learning in students. According the teachers implementing the HAF in their classrooms appreciated the integration of various learning domains and holistic approach of assessment of their students. Similar results were observed by Huda & Mahmudah (2023), confirming that with the use of holistic assessments teachers can assess students' ability in a better manner.

The multidimensional nature of the present framework aligns with the Universal Learning Design-UDL approach that encourages teachers to provide options in the assessments, inclusive assessments, and consideration on strengths (Kusumaningsih, 2021). The research employed by Lam (2024) gathered the insights on current assessment challenges and practices, and highlighted the need for exploration of strategies for improving competency-based assessments. In the context of modern education, the HAF presented the reforms that are required to make assessments more authentic and competency based. In the present study teachers expressed positive approach towards the HAF though they faced challenges like managing time and effort. Similar findings were observed in the study conducted by Demir et al (2019), wherein teachers showed positive attitude towards alternative assessments although some of them do not feel competent to conduct such assessments.

In conclusion the Holistic Assessment Framework mark a significant step forward in assessment at elementary education, with the evolution of holistic, multidimensional, student centric assessments. The framework reinforces the notion that traditional assessments can be reformed in the context of modern world to include holistic aspects and flexibility to bring in academic evolution for the improving learning and development in elementary school students.

Implications

Implications for Practice

The case study presented clearly demonstrates the potential of multidimensional and holistic assessment framework for assessing learning in students at elementary schools encompassing knowledge, skills, and attitudinal aspects. This framework can be adapted to bring in learner centricity in assessments, prioritizing personalized formative assessments. Assessments can be conducted along with teaching-learning activities, making learning fun that will reduce the burden and exam stress usually associated with the traditional exams.

Implications for Policy

The findings could inform reforms in curricula and teacher training initiatives for student centric and holistic multidimensional assessments. Initiatives in organizing holistic assessments and reducing monotonous test-based evaluations can be practiced by incorporating the HAF in policy reforms. Teachers can be motivated, trained, and incentivized to use this assessment framework in elementary schools by providing necessary support.

For implementing HAF a targeted professional developmental program would be recommended for teachers that can help them to focus on the practical strategies for implementing HAF. The programmes can be conducted throughout the academic year followed by a reflection and follow-up one day session every month during the implementation of HAF. Workshops can be organized for teachers which should include role playing scenarios, designing lesson plans and for time management techniques. The HAF can have a broader reach and utility if implemented as a policy in diverse school settings while funds are allocated justifiably in teacher training and resource utilizations.

Study Limitations

While this case study provides valuable insights into implementation of holistic assessment framework for elementary schools, it is limited by its major focus on a single school in an urban area and may not cover the insights from other schools in rural areas, having diverse social and organizational contexts. This study was limited to a selective school and group of teachers who voluntarily participated in implementing the HAF. Thus, the findings of this paper may not fully represent the experiences of teachers in different contexts or school boards. Apart from this, the effectiveness of the framework also depends on the variations in school resources, teacher training and student demographics, thus limiting the generalizability of the results.

Further the study is based on insights and reflections obtained through teachers who were trained and implemented the HAF, while other data sources such as student performance records and classroom observations were not considered. Additionally, the data collection relied on semi-structured interviews, which may suggest the potential researcher bias. The timebound nature of the study captures the short-term outcomes. Long term effects to understand the effectiveness of HAF is out of the scope of this study. Further research may be conducted in future longitudinally. Despite these limitations the study provides a nuanced understanding of the structure, impact of HAF and teacher perceptions of implementing HAF that can be operationalized in practice.

Conclusion

This comprehensive multidimensional assessment framework holds potential for transforming the educational assessment process at elementary level. The principles followed to design the assessment framework mainly based on learner centricity, constructivism, personalized assessments, differentiation, and authentic assessments. The applicability of the framework was determined with the help of hybrid approach including deductive and inductive analysis of the data gathered through the teachers practicing the HAF on the elementary school children. The perceptions, experiences and insights of these teachers are found to be useful in this process.

The teachers perceived traditional examinations monotonous, having limited scope for holistic learning as the assessments are standardized and theory based, largely focusing on cognitive domain and are test centric relying excessively on exams and tests to assess student learning. Traditional assessments focus on memorization and has limited assessment scope to assess practical oriented, real-world applications on the learning. They perceived these as teacher centred and burdensome for students as students take stress of written examination. Teachers faced administrative challenges and issues like adhering to the guidelines, paperwork, and tasks such as conversion of marks into grades, overemphasizing grading. Time management difficulties, one-size-fits-all approach and difficulty in keeping students engaged in learning and assessments due to lack of motivation and fun, especially for elementary school kids. Teachers desire for a more comprehensive assessments and think positively towards new framework as compared to the traditional assessments.

The Holistic Assessment Framework perceived by teachers as holistic framework providing scope for personalized assessments, practical applications, skill development opportunities, and having wide scope for continuous assessments providing multiple

opportunities for teachers to conduct varied formative assessments. The HAF empowered students making them active and providing opportunities for deep learning, eventually improving their confidence. It was stated that the new framework provides improved communication with parents. Teachers experienced improved student engagement, teacher satisfaction while implementing the HAF. Reiterating the holistic nature of the framework, teachers felt that HAF makes learning enjoyable by providing adaptation and flexibility, scope for emotional and social development and personalized learning. While implementing HAF they faced some challenges as management of time and effort in adapting the new framework in large classrooms. Initially they struggled to setting assessments and managing creative assessment tasks. Additionally, teachers would like to have the processes in the HAF to be streamlined to save on time and effort.

Levels of interest and engagement found to be improved as students enjoyed the assessments, and appeared more confidently to these assessments. They found positive changes due to reduced exam related stress among students as students get choices and variety of assessment tasks. They mentioned these assessments as 'Invisible assessments' as the assessments were seamlessly integrated with the classroom teaching-learning activities. Teachers expressed that the HAF helped them to align assessment tasks with the learning outcomes effectively and achieve them. The HAF also found useful for skill development. The clarity and purposefulness in assessments, emphasis on student centricity, empowering teachers to create and conduct innovative assessment are the important highlights of the framework gained from the teacher reflections. Thus, the teachers found the framework impactful and applicable due to practical learning approach, conducive stress-free learning environment, students improved learning engagement, opportunities to develop skills and attitudes along with cognitive skills, and over the above the scope for students for self-development. The teachers find this framework relevant to modern education requirements as well as equity-based education.

Teachers shared an overwhelmingly positive response to the HAF – especially about how they could assess student engagement, creativity, and socio-emotional development. They emphasized that the traditional forms of assessment were centred around the ability of the students to recall information or apply some basic literacy and numeracy skills, mostly focussed on the book-based knowledge. Before HAF there was rarely any real-world connection and even question paper setting meant to restrict it to what is mentioned in the prescribed text books of the grade. The traditional assessment followed a one-size-fits-all approach. Examinations till before the framework, found students under a peer and parental pressure as against the present one where students enjoy the process even while the assessment is going on.

The present form of HAF ensures that the assessments take into consideration a broader view of creativity and communication skills which are essential for a holistic development of the child. It not only considers the cognitive skills but also other domains of learning like emotional and social. Thus, the HAF promotes a multidimensional view and not just on academic performance. While the HAF ensures that teachers can assess the conceptual clarity of the students, it is also a very fun process for the students. Another highlight of the new framework is that the teachers cannot give a descriptive remark and is more personalized such that the teachers can follow up on the individual strengths of each student. Even the unique grade descriptors introduced in the present HAF was a welcome change. This new assessment method has also meant better communication with parents. All teachers implementing this new curriculum felt it to be an interesting and enriching experience while giving better insights into the learning process of each student in their class. However, they also noted the practical challenges they faced like managing the time for continuous assessments due to the large class sizes. Many assessments needed them to procure eco-friendly material for hands-on activities and that too at times were challenging considering the number of students needing them. They also mentioned that they had to balance the traditional curriculum requirements with the newly developed HAF, for which a better institutional support could have made the process seamless.

This research contributes meaningfully to the body of literature by providing insights into how the teachers teaching in early year classrooms can make assessments both relevant and fun while also catering to the diverse needs of a heterogeneous class with many students. Also, in contrast to other papers that talk about diverse assessments, this assessment framework considers this diversity and results in a HAF as evidence of achievement.

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Conflicts of interest/Competing interests

The author reports there are no competing interests to declare.

Data availability

Data can be shared on request.

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