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## Mapping the Epistemological Dimensions of Educators' Assessment Literacy

### ABSTRACT

This study aimed to explore the epistemological dimensions of educators' assessment literacy by investigating how teachers conceptualize knowledge, authority, and purpose in the context of assessment practices. A qualitative research design was employed using semi-structured interviews with 21 educators from Tehran, selected through purposive sampling to ensure disciplinary diversity. Data collection continued until theoretical saturation was reached. All interviews were transcribed verbatim and analyzed thematically using NVivo software. The analysis process involved open coding, axial coding, and the development of categories to identify the underlying epistemological orientations within participants' assessment practices. Three major themes emerged: (1) conceptions of knowledge in assessment, (2) sources of epistemological authority, and (3) the epistemic purpose of assessment. Participants demonstrated a range of epistemological beliefs, often blending objectivist and constructivist assumptions. While some emphasized standardization and objectivity, others valued context-sensitive, inquiry-based assessment approaches. Sources of authority included formal pedagogical training, institutional norms, disciplinary traditions, and personal experience. Teachers also varied in their views on assessment purpose, with orientations ranging from summative judgment to formative feedback and reflective practice. Tensions between policy demands and personal beliefs were frequently noted, highlighting the complex interplay of systemic and individual factors. The findings suggest that assessment literacy is deeply shaped by educators' epistemological beliefs, which in turn are influenced by disciplinary, institutional, and experiential contexts. A reconceptualization of assessment literacy as an epistemic practice—rather than a purely technical one—is necessary. Professional development programs should incorporate epistemological reflection to support more coherent and critically informed assessment practices.

**Keywords:** Assessment literacy; epistemology; teacher beliefs; formative assessment; qualitative research; educational assessment; Tehran educators.

## Introduction

Assessment literacy has emerged as a cornerstone of contemporary educational practice, encompassing the knowledge, skills, and values necessary for designing, implementing, and interpreting student assessment. While traditional definitions of assessment literacy have emphasized technical competence in selecting and applying assessment tools (Popham, 2009), a growing body of literature advocates for a broader, more epistemologically grounded understanding that incorporates educators' beliefs about knowledge, learning, and evidence (DeLuca, LaPointe-McEwan, & Luhanga, 2016). This epistemological perspective reframes assessment literacy not merely as a set of operational skills but as a complex, situated

construct shaped by educators' conceptions of what constitutes valid knowledge, how that knowledge is acquired, and how it ought to be evaluated.

In this regard, epistemological beliefs—defined as individuals' conceptions about the nature of knowledge and the process of knowing—play a central role in shaping how teachers understand and enact assessment (Hofer & Pintrich, 1997). These beliefs influence critical dimensions of classroom practice, from the interpretation of assessment data to the alignment of tasks with learning objectives and the delivery of feedback (Buehl & Fives, 2016). For instance, educators who view knowledge as fixed and objective may prefer standardized, summative assessments, whereas those who perceive knowledge as evolving and contextual may be more inclined toward formative and authentic assessment methods (Brown, 2011).

Although the importance of teachers' epistemological beliefs has been well-established in general pedagogical literature (Kagan, 1992; Tsai, 2002), their specific influence on assessment literacy remains under-explored. A few studies have begun to investigate this connection. For example, Brookhart (2011) highlights how educators' implicit beliefs about learning and knowing often operate as hidden curricula in assessment decisions, leading to inconsistencies between espoused theories and classroom practices. Similarly, Xu and Brown (2016) argue that assessment literacy frameworks must account for teachers' underlying epistemologies to foster deeper, more reflective engagement with assessment.

The call for epistemological grounding in assessment literacy is also reinforced by shifts in educational policy and practice. The rise of formative assessment, competency-based learning, and student agency in educational discourse challenges educators to move beyond procedural compliance and engage critically with the philosophical underpinnings of their work (Black & Wiliam, 2009). As DeLuca, Coombs, and LaPointe-McEwan (2019) observe, the field must shift from a “technical-instrumentalist” to a “critical-reflective” orientation, one that situates assessment within broader epistemic, ethical, and sociocultural contexts.

Despite these theoretical advances, practical implementation remains uneven. Many teachers continue to receive limited or fragmented preparation in assessment during pre-service and in-service training (Volante & Fazio, 2007), leading to reliance on institutional norms, peer imitation, or trial-and-error approaches (Looney, Cumming, van Der Kleij, & Harris, 2018). Moreover, educational systems often impose rigid accountability frameworks that constrain educators' epistemic agency, pressuring them to prioritize test scores over meaningful learning (Klenowski, 2009). These tensions highlight the need for empirical inquiry into how educators' epistemological beliefs intersect with their assessment practices in context.

Qualitative research offers a valuable lens for such inquiry, as it allows for rich, contextualized understanding of how assessment literacy unfolds in practice. Studies using qualitative methods have illustrated how educators negotiate multiple sources of epistemological authority—formal training, policy mandates, disciplinary norms, and personal experience—in making assessment decisions (Hill, Ell, & Eyers, 2017). For example, Remesal (2007) found that teachers' classroom assessment strategies often reflected hybrid epistemological positions, combining traditional and constructivist elements in ways not easily captured by standardized frameworks.

In the Iranian context, where this study is situated, educational reform efforts have emphasized the modernization of assessment practices and the development of reflective practitioners (Abolfazli Khonbi & Sadeghi, 2013). However, challenges persist due to curriculum rigidity, exam-oriented culture, and limited professional development opportunities (Shirvani, 2009). These systemic barriers underscore the importance of understanding the epistemological dimensions of assessment literacy among Iranian educators—particularly in urban centers like Tehran, where policy reforms are often first implemented.

The present study seeks to address this gap by mapping the epistemological dimensions of educators' assessment literacy through qualitative inquiry. It aims to explore how educators conceptualize knowledge and learning in relation to assessment, what sources of authority they rely on in making assessment decisions, and how they articulate the purpose and function of

assessment in educational contexts. The focus on epistemology provides a deeper lens through which to understand not just what teachers do in assessment, but why they do it—and how their underlying beliefs and values shape those decisions.

Three guiding research questions frame this study:

1. How do educators conceptualize the nature of knowledge in the context of assessment?
2. What epistemological sources inform their assessment practices?
3. How do educators perceive the purposes of assessment, and how are these linked to their broader beliefs about teaching and learning?

To answer these questions, the study draws on semi-structured interviews with 21 educators from Tehran, analyzed thematically using NVivo software. The research adopts an interpretive framework, recognizing that participants' narratives reflect both individual meaning-making and broader sociocultural influences. By identifying key themes and subthemes in how educators talk about assessment, the study aims to contribute to a more nuanced understanding of assessment literacy—one that integrates epistemological insight with pedagogical application.

In doing so, this research aligns with recent calls for reconceptualizing assessment literacy as a multifaceted construct that includes technical, pedagogical, and epistemological dimensions (DeLuca, Coombs, & LaPointe-McEwan, 2019; Xu & Brown, 2016). It contributes to the literature by offering empirical evidence from a non-Western context, enriching global conversations about assessment reform and teacher development. Furthermore, the findings have implications for teacher education, professional development, and educational policy, suggesting the need for programs that not only train teachers in assessment techniques but also foster critical reflection on the epistemic foundations of those techniques.

In sum, understanding the epistemological dimensions of assessment literacy is essential for advancing both the theory and practice of educational assessment. As the field moves toward more holistic and equitable approaches to learning evaluation, it is imperative to center educators' beliefs, values, and reasoning as key components of assessment competence. This study aims to contribute to that agenda by illuminating how educators in Tehran navigate the complex terrain of assessment through an epistemological lens.

## Methods and Materials

### *Study Design and Participants*

This study adopted a qualitative research design, employing an interpretive approach to explore the epistemological dimensions of educators' assessment literacy. The choice of a qualitative framework allowed for in-depth engagement with participants' perspectives, experiences, and belief systems surrounding assessment practices.

The participants consisted of 21 educators working across various educational levels and disciplines in Tehran. These individuals were purposefully selected to ensure a range of teaching backgrounds, years of experience, and institutional contexts. Sampling continued until theoretical saturation was achieved—that is, the point at which no new themes or insights emerged from the data. This approach enabled the study to capture rich and varied understandings related to assessment literacy from an epistemological standpoint.

### *Data Collection*

Data were collected exclusively through semi-structured interviews. Each interview lasted approximately 45 to 70 minutes and was conducted either in-person or via secure online communication platforms, depending on participant preference and availability. The interview protocol was designed to elicit participants' reflections on their knowledge, beliefs, values, and

practices concerning assessment. Key topics included perceptions of valid assessment, beliefs about objectivity versus subjectivity in scoring, the influence of theoretical knowledge on assessment decisions, and their understanding of formative versus summative purposes.

Interview questions were open-ended and flexible to allow for elaboration and follow-up. Participants were encouraged to share concrete examples from their teaching practices, enabling deeper insights into the epistemological underpinnings of their assessment decisions. All interviews were audio-recorded with the participants' informed consent and transcribed verbatim for analysis.

### *Data analysis*

Thematic analysis was employed to analyze the interview data, supported by the use of NVivo qualitative data analysis software. The analytic process began with open coding, wherein relevant excerpts were assigned conceptual codes based on their content and meaning. These initial codes were then grouped into subthemes through axial coding, and subsequently synthesized into broader thematic categories that captured the epistemological dimensions of assessment literacy.

To ensure rigor and trustworthiness, the analysis process involved iterative coding by multiple researchers, peer debriefing sessions, and member checking with selected participants to validate key interpretations. This process facilitated a nuanced understanding of how educators conceptualize and enact assessment literacy within their epistemic frameworks.

### **Findings and Results**

#### Theme 1: Conceptions of Knowledge in Assessment

Educators who emphasized belief in objectivity saw assessment as a neutral process aimed at measuring predefined standards. These participants frequently cited the use of rubrics, standardized criteria, and fixed benchmarks as essential tools for ensuring fairness. As one participant explained, "I believe students should know exactly what's being measured—rubrics should be transparent and strictly followed to avoid bias" (Participant 7).

The constructivist view of learning was common among educators who emphasized that knowledge is constructed, not simply recalled. These participants believed assessments should be flexible and context-sensitive. One teacher remarked, "Students show what they know in different ways. We need to assess understanding, not just answers" (Participant 13).

A significant number of interviewees acknowledged the presence of epistemic uncertainty in assessment. They expressed discomfort with grading when learning outcomes are ambiguous or when personal judgment heavily influences decisions. As Participant 4 noted, "Sometimes I ask myself, am I grading their answer or my interpretation of it?"

The theme of alignment between knowledge and assessment appeared in statements about ensuring that assessments match learning objectives and curricular intentions. Educators saw alignment as a way to ensure assessments were epistemologically coherent. "If the assessment doesn't reflect the learning outcomes, it's not valid, no matter how well-designed," one teacher emphasized (Participant 10).

Some participants described knowledge as performative, suggesting that learning should be demonstrated through action or application. These educators favored project-based and portfolio assessments. "When students create something or solve a problem, I can really see what they've learned—not just from a test," shared Participant 16.

The issue of dualism versus relativism in assessment arose when teachers discussed tensions between treating knowledge as fixed versus contextually dependent. While some upheld objective standards, others admitted grading varied across contexts. "There's no single correct answer in literature," explained Participant 8, "but I still have to give a grade—so I struggle."

Lastly, the idea of assessment as inquiry was expressed by those who saw evaluation as an ongoing, reflective process. Rather than final judgments, they viewed assessment as a learning opportunity for both students and teachers. One participant commented, “Assessment should open up questions, not close them down” (Participant 19).

### Theme 2: Sources of Epistemological Authority

In discussing pedagogical training experiences, several educators noted the limited focus on assessment theory during their formal education. Those who did receive relevant instruction emphasized its impact. “My master’s course in assessment changed everything for me—it made me question how I grade,” said Participant 6. Others felt unprepared and relied on personal experience.

Institutional norms and policies emerged as a strong influence, with many teachers describing pressure to conform to testing mandates or school-wide grading practices. “I know formative assessment is ideal, but our school wants numerical grades every two weeks,” remarked Participant 3. These systemic constraints often limited epistemological flexibility.

The role of peer and collegial influence was also prominent. Educators commonly adopted practices shared by colleagues, either informally or through mandated collaboration. “We all use the same rubric in our department—even if I think parts of it don’t match my subject,” said Participant 11. This practice reinforced shared, but sometimes unexamined, assessment beliefs.

Experience-based judgment was frequently cited as a major source of authority. Veteran teachers often relied on intuitive judgment shaped over years. “You just get a feel for what a good answer looks like,” noted Participant 14. While this experiential knowledge was valued, it often remained implicit and untheorized.

Participants also acknowledged the influence of disciplinary conventions on their assessment approaches. Science teachers leaned toward measurable outcomes, while those in humanities favored interpretive assessments. “In biology, I need clear right or wrong answers. But in history, I give more weight to argument and reasoning,” explained Participant 2.

Finally, references to research and professional literature varied. Some educators mentioned trying to apply evidence-based strategies, while others admitted limited familiarity. “I’ve heard of formative assessment theory, but honestly, I’ve never read the original research,” said Participant 17. This indicated gaps between epistemological ideals and applied knowledge.

### Theme 3: Epistemic Purpose of Assessment

Teachers who prioritized assessment for learning emphasized the formative role of feedback and the opportunity for students to grow. These educators used assessment data to guide instruction. “I never see assessment as final—every quiz is a chance for us both to improve,” said Participant 9.

The function of assessment of learning, however, remained central in many educators’ practices. These participants saw assessment primarily as a tool for grading and certification. As Participant 5 explained, “I have to submit final grades. So regardless of how much they’ve improved, I need to report a number at the end.”

Some participants described assessment as reflective practice, using evaluation results to improve their teaching. “When I see that half my students failed a question, I know that’s on me, not just them,” reflected Participant 1. This recursive understanding of assessment underscored its bidirectional impact.

The idea of empowerment through assessment was particularly strong among educators with student-centered philosophies. They encouraged students to co-create rubrics and self-assess. “When students write the criteria themselves, they engage more deeply with the learning goals,” said Participant 18.

On the other hand, assessment for accountability was described as an external demand that shaped internal practices. Teachers referenced administrative pressure to produce results, which often led to more rigid, summative approaches. “I want to be flexible, but the school wants data—it’s a constant tension,” noted Participant 12.

## Discussion and Conclusion

This study explored the epistemological dimensions of educators' assessment literacy by examining how teachers in Tehran conceptualize knowledge in assessment, what sources they rely on for epistemic authority, and how they perceive the purpose of assessment. The findings reveal that educators draw from a wide range of epistemological orientations, often combining objectivist and constructivist perspectives within their assessment practices. This hybridity reflects a broader shift in assessment discourse away from rigid dichotomies toward more flexible and integrated understandings of knowledge, learning, and evaluation.

One of the central findings relates to teachers' conceptions of knowledge within assessment. While some educators adhered to objectivist views—emphasizing the need for standardized rubrics and measurable outcomes—others adopted constructivist interpretations that valued contextualized learning and open-ended assessment formats. Notably, many participants reported operating with mixed epistemological assumptions. For example, while relying on fixed rubrics for accountability purposes, they also adjusted criteria based on their judgment of student progress or classroom dynamics. This aligns with prior research indicating that teachers often hold “nested epistemologies” or dualistic belief systems that vary by context (Tsai, 2002). These results further support the notion that educators' epistemological beliefs are not monolithic, but rather shaped by the interplay of disciplinary norms, pedagogical goals, and institutional pressures (Buehl & Fives, 2016).

Another significant theme was epistemic uncertainty, where teachers described tensions between subjective judgment and the desire for objective criteria. Some expressed discomfort with interpretive grading, especially when assessment rubrics failed to capture nuanced learning. This mirrors findings by Brookhart (2011), who argued that the ambiguity inherent in many assessment decisions reflects deeper epistemological dilemmas rather than technical deficiencies. In the current study, teachers' awareness of this uncertainty often prompted reflective inquiry, where they re-evaluated their assessment decisions or consulted with peers—an important behavior consistent with what DeLuca et al. (2019) termed “critical-reflective assessment literacy.”

Teachers also frequently framed assessment as a dialogic or inquiry-oriented process, indicating an emerging shift from assessment as judgment to assessment as learning. These views were particularly prevalent among teachers who emphasized formative practices, student voice, and iterative feedback. This aligns with Black and Wiliam's (2009) concept of formative assessment as a reciprocal process that enhances both teaching and learning. By viewing assessment as a space for inquiry rather than control, educators demonstrated an epistemological openness that supports deeper student engagement and adaptive instruction.

The second major theme—sources of epistemological authority—highlighted the complex web of influences that shape educators' assessment literacy. While formal pedagogical training was cited as important by some, many participants reported relying more heavily on collegial interactions, disciplinary conventions, and personal experience. This is consistent with research by Hill, Ell, and Eyers (2017), who found that teachers often develop assessment knowledge through situated professional learning, particularly when institutional training is insufficient. Interestingly, participants in this study described learning from peers not only in technical terms (e.g., how to write a rubric), but also in epistemological terms—such as how to interpret ambiguous responses or resolve grading conflicts. This suggests that peer collaboration can serve as a critical site for epistemological development, particularly in contexts where formal support is limited (Looney et al., 2018).

Disciplinary identity also emerged as a powerful structuring force. Teachers in science disciplines emphasized precision, replicability, and right–wrong distinctions, whereas those in the humanities highlighted interpretation, argument quality, and narrative coherence. These discipline-specific epistemologies shaped not only the design of assessment tasks but also educators' justification for why certain assessment forms were more valid or meaningful. These findings reinforce earlier studies by Brown

(2011) and Klenowski (2009), who observed that assessment literacy is fundamentally shaped by epistemological norms within academic disciplines. This disciplinary lens is especially crucial in understanding how assessment literacy manifests differently across educational domains, even within the same institutional setting.

Participants also referred to institutional norms and policy mandates as key drivers of their assessment practices. Many described tension between their epistemological beliefs and external demands for standardized reporting or quantifiable data. For example, several teachers expressed frustration with mandatory grading schedules that left little room for formative feedback. This dynamic reflects what Xu and Brown (2016) describe as a misalignment between assessment policy and teacher agency, where institutional constraints undermine opportunities for epistemologically informed assessment practice. Such constraints not only limit the scope of assessment literacy but can also erode teachers' motivation to engage in reflective or innovative assessment design.

The third theme—the epistemic purpose of assessment—revealed a spectrum of orientations. While some participants framed assessment as primarily summative and outcome-oriented, others highlighted its formative, reflective, or even emancipatory functions. Teachers who saw assessment as a tool for learning emphasized feedback, growth, and student empowerment. These findings are in line with the evolving literature on assessment for learning (AfL), which promotes formative assessment as central to student-centered education (Black & Wiliam, 2009; DeLuca et al., 2016). Moreover, a smaller subset of participants articulated assessment as teacher reflection, using student performance to interrogate their own instructional effectiveness. This reflexive dimension suggests a mature form of assessment literacy that integrates self-assessment and critical pedagogy (Remesal, 2007).

However, the most novel insight from the current study lies in the intersection between epistemology and professional identity. Teachers who described assessment as relational, contextual, or negotiated also tended to view themselves not just as instructors but as facilitators of inquiry and growth. This identity orientation appeared to correlate with a more constructivist and dialogic view of assessment. Conversely, those who emphasized assessment for control or accountability tended to adopt more hierarchical or transmission-based views of teaching. These associations point to the broader implications of epistemological beliefs—not only in assessment practice but also in how teachers conceive their roles as professionals and knowledge agents (Buehl & Fives, 2016; Hofer & Pintrich, 1997).

Taken together, the findings of this study suggest that assessment literacy must be reconceptualized as an epistemic practice, not merely a technical one. Teachers' beliefs about knowledge, authority, and purpose deeply inform how they design, interpret, and use assessment tools. Moreover, these beliefs are shaped by a dynamic interaction of personal, institutional, and cultural factors, requiring flexible and context-sensitive approaches to professional learning. In line with DeLuca et al. (2019), we advocate for an expanded model of assessment literacy that foregrounds epistemological awareness as a core dimension of professional competence.

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## Authors' Contributions

All authors equally contributed to this study.

## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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