

Impact of Competency-Based and Multi-Dimensional Assessment on Learners' Development in West Hararghe Secondary Schools, Oromia

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Abstract

This study investigated how competency-based and multi-dimensional assessment approaches contribute to learners' cognitive, social, and emotional development. A mixed research approach particularly explanatory sequential design was employed. The actual sample size of 300 secondary school students were selected through stratified random sampling. The research addressed three key questions: (1) What types of competency-based and multi-dimensional assessment approaches are currently utilized? (2) To what extent do competency based and multi-dimensional assessment approaches predict learners' development? and (3) What contextual barriers affect the implementation of competency based and multi-dimensional assessment approaches? Quantitative data were collected using questionnaires. Collected data were analyzed using descriptive statistics, multiple regression, path analysis, and structural equation modeling (SEM). Qualitative data underwent thematic analysis. Descriptive results showed that secondary schools employed a range of assessment approaches, with the most common being formative assessments (64%). In contrast, structured peer and self-evaluation procedures, as well as competency-aligned rubrics, appeared less frequently practiced. Multiple regression analysis showed that competency-based and multi-dimensional assessment approaches significantly predicted holistic learner competencies ($F(3, 296) = 18.42, p < .001, R^2 = .427$). Structural equation modeling confirmed strong direct effects of cognitive oriented assessment approach on learners' competencies ($\beta = .52$). Path analysis revealed that emotional competence partially mediated the influence of assessment approach. The study recommends targeted professional development, improved resource allocation, and strengthened school level support to adopt competency-based and multi-dimensional assessment approaches.

Keywords: Assessment approaches, holistic learner development, Oda Bultum University, Secondary school, Oromia.

INTRODUCTION

Assessment is a fundamental element of the teaching–learning process that shapes both what students learn and how they learn (Shepard, 2000). Contemporary educational discourse increasingly recognizes assessment as a tool for promoting holistic learner development rather than merely measuring academic performance (Darling-Hammond et al., 2020). Traditional approaches that rely heavily on rote memorization and high-stakes summative examinations have been widely criticized for their limited capacity to capture the full range of learners' cognitive, social, and emotional competencies (Pellegrino, Chudowsky, & Glaser, 2001). In response, many education systems are shifting toward multi-dimensional and competency-based assessment models that emphasize the application of knowledge, skill development, and the cultivation of attitudes and values in authentic learning contexts (Rychen & Salganik, 2003).

In secondary education, assessment approaches are particularly influential because adolescence is marked by significant cognitive, social, and emotional development that directly affects motivation, engagement, and academic achievement (Pekrun, 2006; Steinberg, 2014). Effective assessment systems should therefore recognize and support these interconnected developmental domains to promote well-rounded learners capable of critical thinking, adaptability, and responsible social participation (Durlak et al., 2011). Such approaches encourage reflective learning, collaborative engagement, and continuous feedback, which are essential for meaningful and sustained learning outcomes.

In Ethiopia, recent education reforms have introduced competency-based curricula and learner-centered pedagogies aimed at improving the quality and relevance of schooling (Ministry of Education [MoE], 2018). However, evidence indicates that assessment practices in many secondary schools remain predominantly examination-oriented, with limited use of formative feedback, self-reflection, collaborative assessment, and strategies that support socio-emotional development (UNESCO, 2017). This disconnect between curriculum reforms and classroom assessment practices raises concerns about the ability of current evaluation systems to effectively promote holistic competency development among students.

These challenges are particularly evident in West Hararghe Zone, where contextual factors such as limited teacher preparation, inadequate pedagogical resources, and inconsistent institutional support may constrain the effective implementation of competency-based and multi-dimensional assessment practices. Although the shift toward competency-based and multi-dimensional assessment is widely advocated in policy and theory, empirical evidence on how such approaches are practiced in secondary schools within this context remains limited. Investigating the current implementation of competency-based and multi-dimensional assessment practices, and their influence on students' cognitive, social, and emotional competencies, is therefore essential. Such evidence can inform policy implementation, guide teacher professional development, and strengthen school-level assessment practices aimed at improving holistic learner outcomes in the Ethiopian secondary education system.

Guided by this concern, the present study is framed around three key research questions:

- What types of competency-based and multi-dimensional assessment approaches are currently utilized in secondary schools of West Hararghe Zone?
- To what extent do competency-based and multi-dimensional assessment approaches predict learners' cognitive, social, and emotional competencies in secondary schools of West Hararghe Zone?
- What contextual barriers affect the implementation of competency-based and multi-dimensional assessment approaches in secondary schools of West Hararghe Zone?

Addressing these questions enables the study to systematically examine the existing assessment approaches, evaluate their predictive power on holistic learner development, and identify contextual constraints that influence effective implementation in secondary schools of West Hararghe Zone, Oromia.

LITERATURE REVIEW

Concept of Multi-Dimensional Assessment

Multi-dimensional assessment refers to a comprehensive approach to evaluating learning that captures the full range of learner development across cognitive, social, emotional, and behavioral domains (Brookhart, 2013; Pellegrino, Chudowsky, & Glaser, 2001). Rather than limiting evaluation to academic knowledge and test performance, this approach recognizes that effective learning involves the integration of knowledge, skills, attitudes,

and dispositions. As such, multi-dimensional assessment seeks to provide a more accurate and holistic picture of learners' capabilities, progress, and potential by addressing both academic and non-academic dimensions of learning.

In contrast to traditional assessment models, which largely emphasize summative testing and ranking of learners, multi-dimensional assessment incorporates a diverse set of assessment tools and strategies. These include performance-based tasks, projects, portfolios, systematic classroom observations, peer assessment, self-assessment, and reflective journals (Wiggins, 1998). Such tools allow learners to demonstrate their understanding and competencies in authentic contexts that mirror real-life situations. By engaging learners in active demonstration of learning, these approaches move assessment beyond recall of information toward application, analysis, and synthesis of knowledge.

The theoretical foundation of multi-dimensional assessment is strongly rooted in constructivist learning theories, which conceptualize learning as an active, socially mediated, and contextualized process of meaning-making rather than passive absorption of information (Vygotsky, 1978; Shepard, 2000). From this perspective, assessment is not a separate or terminal activity but an integral part of the learning process itself. Assessment tasks are designed to align with meaningful learning activities, enabling learners to construct understanding through interaction, reflection, and feedback. This alignment enhances the validity of assessment by ensuring that what is assessed reflects how learning actually occurs.

Empirical research provides strong support for the effectiveness of multi-dimensional assessment in promoting deep and meaningful learning. Studies indicate that when learners are assessed through authentic, performance-based tasks, they are more likely to engage in higher-order thinking, transfer knowledge across contexts, and develop problem-solving skills (Darling-Hammond & Adamson, 2014). Additionally, these assessment practices generate rich formative data that help teachers identify learners' strengths, misconceptions, and developmental needs, thereby supporting responsive, differentiated, and adaptive instruction (Black & Wiliam, 2009).

Beyond cognitive outcomes, multi-dimensional assessment plays a crucial role in fostering social and emotional development. By intentionally incorporating indicators related to collaboration, communication, emotional regulation, and perseverance, such assessments promote essential life skills that extend beyond academic achievement (CASEL, 2020). Opportunities for peer assessment, self-reflection, and group-based tasks encourage learners to develop empathy, self-awareness, responsibility, and resilience. Consequently, multi-dimensional assessment not only enhances academic learning but also supports the development of well-rounded individuals who are better prepared to succeed in complex educational, social, and professional environments.

Competency-Based Assessment in Secondary Education

Competency-based assessment in secondary education emphasizes learners' demonstrated ability to apply clearly defined competencies in authentic and meaningful contexts rather than merely recalling factual knowledge (Mulder, 2014). Core competencies commonly assessed at this level include problem-solving, critical thinking, communication, collaboration, creativity, and self-management. These competencies are understood as integrated and dynamic combinations of knowledge, skills, attitudes, and values that enable learners to perform effectively across diverse academic, social, and real-life situations (Rychen & Salganik, 2003). As such, competency-based assessment moves beyond traditional content-focused evaluation to capture learners' capacity to transfer learning to new and complex contexts.

Within competency-based education systems, assessment is systematically aligned with explicitly articulated learning outcomes, performance standards, and observable indicators of mastery (Frank et al., 2010). This alignment ensures coherence between curriculum, instruction, and assessment, thereby enhancing the validity and transparency of evaluation practices. Learners are assessed based on what they can do with what they know, often through performance tasks, projects, demonstrations, and real-world problem scenarios. Clear criteria and benchmarks allow both teachers and learners to monitor progress toward mastery and to identify areas requiring further development.

Empirical research suggests that competency-based assessment has a positive influence on learner autonomy and intrinsic motivation. By clarifying expectations and emphasizing mastery of competencies rather than norm-referenced comparison among learners, this approach encourages students to take greater responsibility for their own learning (Sturgis, Patrick, & Pittenger, 2011). Learners are more likely to engage deeply with learning tasks when assessment criteria are transparent and when success is defined in terms of competence attainment rather than relative ranking. This focus on mastery fosters a growth-oriented mindset and supports sustained engagement in learning.

Competency-based assessment also facilitates differentiated instruction by allowing learners to progress at varying paces according to their demonstrated level of competence rather than the amount of time spent in class (Gervais, 2016). This flexibility is particularly valuable in secondary education, where learners exhibit diverse learning needs, abilities, and interests. Teachers can use assessment evidence to tailor instruction, provide targeted support, and design enrichment opportunities that respond to individual learner profiles.

Despite its documented benefits, the literature consistently emphasizes that the effective implementation of competency-based assessment presents significant challenges. High-quality implementation requires well-designed and contextually appropriate rubrics, strong teacher assessment literacy, and sustained professional development (Torrance, 2017). Teachers must be equipped with the skills to design valid assessment tasks, apply performance criteria consistently, and provide meaningful feedback. In addition, strong institutional and policy support systems are essential to ensure alignment between competency-based assessment practices and broader examination, reporting, and accountability structures (UNESCO, 2017). Without such support, competency-based assessment risks being reduced to superficial practices rather than serving as a transformative approach to learner evaluation and development.

Cognitive, Social, and Emotional Development

Cognitive development in secondary education is characterized by the progressive refinement of higher-order thinking skills, including analysis, synthesis, evaluation, problem-solving, and metacognitive regulation of learning (Anderson & Krathwohl, 2001). During this stage, learners move beyond basic comprehension toward the ability to integrate knowledge across disciplines, apply concepts to novel situations, and reflect critically on their own thinking processes. Effective instructional and assessment practices at the secondary level therefore need to challenge learners intellectually while supporting the development of independent and self-directed learning skills.

Social development, on the other hand, refers to learners' capacity to interact constructively with peers, teachers, and the wider community through cooperation, communication, leadership, empathy, and conflict resolution (Wentzel, 2017). Secondary school learners increasingly engage in collaborative learning environments that require negotiation of roles, shared responsibility, and mutual respect. Social competence developed during this period plays a critical role in shaping classroom climate, peer relationships, and learners' sense of

belonging, all of which have been shown to influence motivation and engagement in learning.

Emotional development encompasses learners' ability to recognize, understand, regulate, and appropriately express emotions in ways that support personal well-being and effective functioning (Gross, 2015). In secondary education, emotional competencies such as self-awareness, emotional regulation, resilience, and coping with stress become particularly important as learners face increasing academic demands and social pressures. Learners who possess strong emotional skills are better equipped to manage anxiety, persist through challenges, and maintain positive attitudes toward learning.

The literature consistently underscores the interdependent and mutually reinforcing nature of cognitive, social, and emotional domains of development. Research demonstrates that cognitive engagement and academic performance are deeply influenced by learners' emotional well-being and the quality of their social relationships (Immordino-Yang, Darling-Hammond, & Krone, 2019). Positive emotions and supportive peer interactions enhance attention, memory, and motivation, whereas emotional distress and social isolation can hinder learning. Likewise, social and emotional competencies have been shown to contribute significantly to improved academic achievement, positive classroom behavior, and long-term life outcomes, including employability and mental health (Durlak et al., 2011).

Given this interconnection, assessment practices that focus exclusively on cognitive outcomes risk overlooking critical developmental factors that shape how learning occurs. Such narrowly defined assessment systems may fail to capture learners' collaborative skills, emotional regulation, and adaptive behaviors that are essential for success in both educational and real-life contexts. Consequently, the literature strongly advocates for multi-dimensional assessment approaches that intentionally integrate cognitive, social, and emotional indicators to support holistic learner development and more equitable educational outcomes.

Empirical Studies on Assessment approaches and Holistic Development

A growing body of empirical research across diverse educational contexts demonstrates that formative and learner-centered assessment practices exert a positive influence on learners' cognitive achievement, social skills, and emotional engagement (Hattie, 2009; Nicol & Macfarlane-Dick, 2006). Studies consistently show that assessment approaches emphasizing feedback, reflection, and active learner involvement enhance understanding, promote higher-order thinking, and support sustained academic improvement. When learners are provided with clear criteria and constructive feedback, they are better able to monitor their progress, identify learning gaps, and adopt effective learning strategies.

Beyond cognitive outcomes, empirical evidence highlights the role of assessment practices in shaping learners' social interaction and emotional engagement. Participatory assessment strategies, such as peer assessment and collaborative tasks, foster communication, cooperation, and shared responsibility among learners. These practices also contribute to positive emotional experiences by increasing learners' sense of competence, autonomy, and belonging. Research on student engagement further indicates that assessment practices which value learner voice and agency are associated with higher levels of motivation, persistence, and self-regulated learning (Fredricks, Blumenfeld, & Paris, 2004).

Learner engagement has frequently been identified as a key mediating variable in the relationship between assessment practices and learning outcomes. Constructive feedback, authentic tasks, and opportunities for self-assessment enhance behavioral, cognitive, and emotional engagement, which in turn leads to improved academic performance and deeper learning (Hattie, 2009; Nicol & Macfarlane-Dick, 2006). This mediating role of engagement

supports theoretical models that position engagement as a central mechanism through which instructional and assessment practices influence both academic and non-academic outcomes.

Despite these well-documented benefits, the literature also points to substantial challenges in implementing multi-dimensional and competency-based assessment approaches. Large class sizes, limited instructional materials, heavy teacher workloads, time constraints, and insufficient opportunities for sustained professional development frequently hinder effective adoption, particularly in low-resource educational systems (DeLuca et al., 2012; UNESCO, 2017). These contextual barriers often result in superficial or inconsistent implementation, where assessment reforms are adopted in policy but not fully realized in classroom practice.

Although there is growing international interest in holistic and competency-based assessment, empirical research examining their combined effects on learners' cognitive, social, and emotional competencies remains limited in many developing-country contexts. In Ethiopia, existing studies have largely focused on examination performance, grading practices, and summative assessment, with relatively little attention given to formative, multi-dimensional, and socio-emotional aspects of assessment. As a result, critical dimensions of holistic learner development remain underexplored. The present study addresses this empirical gap by providing context-specific evidence from secondary schools in West Hararghe Zone, Oromia National Regional State, thereby contributing to the national and international discourse on assessment reform and holistic education.

METHODOLOGY

Research Design

The study adopted an explanatory sequential mixed-method research design, in which the collection and analysis of quantitative data were conducted first and subsequently followed by a qualitative phase. This design was particularly appropriate for the purposes of the study, as it allowed the researcher to initially examine and quantify the relationships among key variables related to multi-dimensional and competency-based assessment practices and learners' cognitive, social, and emotional competencies. The quantitative phase provided a broad overview of patterns, trends, and predictive relationships within the data.

Building on these quantitative findings, the qualitative phase was employed to further explore and explain the observed results by capturing participants' perspectives and contextual experiences. Through in-depth qualitative inquiry, the researcher gained deeper insights into the underlying factors, challenges, and contextual conditions influencing the implementation of assessment practices in secondary schools of West Hararghe Zone. The integration of both quantitative and qualitative strands enhanced the comprehensiveness of the study by allowing statistical results to be interpreted in light of real classroom practices and institutional realities. Consequently, the explanatory sequential mixed-method design strengthened the validity and richness of the findings by combining numerical evidence with contextualized understanding.

Participants and Sampling

The quantitative component of the study included 300 secondary school students, and the actual sample size was determined using standard sample size determination procedures commonly applied in survey research. Initially, the required sample size was estimated using the Cochran's Sample Size Formula, which calculates the minimum number of participants needed to achieve reliable estimates at a 95% confidence level with a 5% margin of error. Using the formula:

$n_0 = z^2p(1-p)/e^2$, the initial estimated sample size was approximately 384 respondents. However, considering the finite size of the target student population, as well as practical factors such as accessibility of schools and potential non-response, the sample size was adjusted and finalized at 300 students, which is considered adequate for quantitative analysis in educational research.

To select participants, stratified random sampling was employed to ensure proportional representation of key subgroups within the population, such as grade level and gender. The student population was first divided into relevant strata, and the total sample of 300 was allocated proportionally across these groups. Subsequently, students were selected from each stratum using simple random sampling, ensuring that every student had an equal chance of being included in the study and thereby enhancing the representativeness and reliability of the findings. This approach was employed to ensure proportional representation across different grade levels and schools, thereby enhancing the representativeness and generalizability of the quantitative findings. By accounting for variations in grade and school context, stratified sampling helped to capture a more accurate picture of students' experiences with assessment practices and their cognitive, social, and emotional competencies.

The qualitative component, in contrast, comprised 60 secondary school teachers who were selected through purposive sampling. Teachers were chosen based on criteria such as years of teaching experience, subject specialization, and direct involvement in classroom assessment practices. This deliberate selection enabled the study to draw on rich, practice-based insights from educators who were well positioned to reflect on the implementation, challenges, and implications of multi-dimensional and competency-based assessment approaches. The combination of stratified random sampling for students and purposive sampling for teachers strengthened the methodological rigor of the study by balancing breadth of representation with depth of contextual understanding.

Data Collection Instruments

Quantitative data were gathered using a structured questionnaire specifically designed to capture students' perceptions of assessment practices and their levels of cognitive, social, and emotional competencies. The questionnaire comprised Likert-scale items that were carefully aligned with the key constructs of the study, ensuring both content validity and consistency in measurement. This instrument allowed for the systematic quantification of students' experiences, providing data suitable for descriptive and inferential statistical analyses to examine relationships among assessment practices and learner outcomes.

Complementing the quantitative data, qualitative information was collected through semi-structured interviews with secondary school teachers. These interviews focused on teachers' experiences with assessment practices, the challenges encountered during implementation, and contextual factors that influenced the adoption and effectiveness of multi-dimensional and competency-based assessment approaches. The semi-structured format provided the flexibility to explore participants' perspectives in depth while maintaining alignment with the research objectives. Together, the quantitative and qualitative data collection methods facilitated a comprehensive understanding of assessment practices, enabling the integration of statistical findings with rich, context-specific insights.

Validity and Reliability

The content validity of the questionnaire was established through a systematic review by a panel of experts in educational measurement and assessment, who evaluated each item for relevance, clarity, and alignment with the study constructs. Based on their feedback, necessary revisions were made to enhance the instrument's clarity and appropriateness.

Additionally, a pilot study was conducted with a small group of students to identify ambiguous items, assess the overall comprehensibility of the questionnaire, and refine the wording and structure of items as needed.

Reliability of the questionnaire was assessed through internal consistency analysis, which yielded acceptable Cronbach’s alpha coefficients of 0.82 and above for all subscales, indicating that the items consistently measured the intended constructs. These results provided confidence in the stability and dependability of the quantitative data.

To ensure the trustworthiness of the qualitative findings, multiple strategies were employed. Triangulation was achieved by comparing and integrating data from different sources, including teacher interviews and observations. Member checking was conducted by sharing interview summaries with participants to verify accuracy and ensure that their perspectives were correctly represented. In addition, rich, thick descriptions of the qualitative data were provided to allow readers to evaluate the transferability of the findings to similar contexts. Together, these measures enhanced the validity, reliability, and credibility of both the quantitative and qualitative components of the study.

Data Analysis

Quantitative data were analyzed using a combination of descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were first computed to identify prevalent assessment practices and to summarize students’ cognitive, social, and emotional competencies. Following this, multiple regression analysis was conducted to examine the predictive relationships between multi-dimensional and competency-based assessment approaches and learners’ holistic competence, allowing for the identification of the relative contribution of cognitive-, social-, and emotional-oriented assessment practices.

To further explore the mechanisms underlying these relationships, path analysis and structural equation modeling (SEM) were employed. These techniques facilitated the testing of mediation effects, such as the role of learner engagement and emotional competence in linking assessment practices to academic and non-academic outcomes, as well as the evaluation of overall model fit. SEM provided a robust framework for simultaneously analyzing complex relationships among observed and latent variables, thereby strengthening the interpretability and validity of the findings.

Qualitative data collected from teacher interviews were analyzed thematically. This process involved systematic coding of the data, followed by categorization of codes into overarching themes that reflected patterns, perspectives, and contextual factors influencing assessment practices. Themes were iteratively refined to ensure coherence, depth, and alignment with the research objectives. The integration of thematic qualitative analysis with quantitative findings allowed for a comprehensive understanding of both statistical trends and the underlying contextual realities of assessment implementation in secondary schools of West Hararghe Zone.

RESULTS

Descriptive Statistics of Assessment Practices

Table 1: Types of Assessment Approaches Practiced in Secondary Schools (N = 300)

Assessment Approach	Frequency	Percentage (%)
Formative assessment (quizzes, questioning, feedback)	192	64.0
Summative assessment	139	46.3
Performance-based tasks and projects	141	47.0

Portfolio assessment	118	39.3
Peer assessment	96	32.0
Self-assessment	82	27.3
Competency-aligned rubrics	74	24.7

As shown in the above table, the results clearly demonstrate that formative assessment strategies constitute the dominant mode of classroom assessment practice in secondary schools of West Hararghe Zone, accounting for approximately 64% of the approaches employed. This pattern suggests a growing recognition among teachers of the value of continuous assessment and ongoing feedback in enhancing the teaching–learning process. The increased reliance on quizzes, classroom questioning, assignments, and teacher-provided feedback indicates a shift away from exclusive dependence on summative examinations toward more process-oriented evaluation of student learning. Despite this positive trend, the relatively limited use of learner-centered strategies such as peer assessment, self-assessment, and competency-aligned rubrics reveals that assessment practices remain largely teacher-directed and only partially aligned with the core principles of competency-based education. The underutilization of these approaches restricts learners’ active involvement in evaluating their own progress and that of their peers, thereby reducing opportunities for critical reflection, self-regulation, and metacognitive development. Moreover, the absence of clearly defined, competency-based rubrics constrains the authentic assessment of learners’ skills, attitudes, and real-world application of knowledge. Consequently, while formative assessment is increasingly practiced, its full potential to promote learner autonomy, ownership of learning, and comprehensive demonstration of competencies remains underexploited in the secondary school context of West Hararghe Zone.

Descriptive Statistics of Learner Competencies

Table 2: Descriptive Statistics of Learner Competencies

Learner competency	Mean (M)	Standard Deviation (SD)
Cognitive competence	3.68	0.61
Social competence	3.44	0.66
Emotional competence	3.39	0.71

The results indicate that learners demonstrated relatively higher levels of cognitive competence compared to their social and emotional competencies. This pattern suggests that existing assessment systems are more effective in promoting academic achievement and intellectual skills than in nurturing socio-emotional development. The emphasis on cognitively oriented assessment tasks, such as written tests and content-based evaluations, appears to favor the measurement and reinforcement of knowledge acquisition, reasoning, and problem-solving abilities. In contrast, the comparatively lower mean scores observed in the social and emotional domains point to limited opportunities for learners to develop and demonstrate competencies related to collaboration, communication, self-regulation, and emotional awareness. This imbalance implies that social and emotional learning outcomes are not being systematically or intentionally assessed within current classroom practices. As a result, these competencies may be undervalued or treated as secondary to academic performance. The findings underscore the need for more inclusive and multi-dimensional assessment approaches that deliberately integrate social and emotional indicators through group-based tasks, reflective activities, peer assessment, and performance-based evaluations. Such approaches would help ensure a more balanced

development of learners by aligning assessment practices with the broader goals of holistic and competency-based education.

Multiple Regression Analysis

Multiple regression analysis was conducted to determine the predictive power of assessment approaches on holistic learner competencies.

Table 3: Multiple Regression Results Predicting Holistic Learner Competence

Predictor Variables	B	SE B	B	T	p-value
Cognitive-oriented assessment approach	0.46	0.07	.41	6.57	<.001
Social-oriented assessment approach	0.33	0.08	.29	4.12	<.001
Emotional-oriented assessment approach	0.28	0.07	.26	3.89	<.001

Model summary: $R^2 = .427$, Adjusted $R^2 = .421$, $F(3, 296) = 18.42$, $p < .001$

The regression analysis yielded a statistically significant model, demonstrating that competency-based and multi-dimensional assessment approaches collectively account for 42.7% of the variance learner competence. This substantial explanatory power indicates that assessment practices play a critical role in shaping learners’ overall development across cognitive, social, and emotional domains. Among the predictors, cognitive-oriented assessment approach emerged as the strongest contributor, underscoring their dominant influence on learners’ academic growth and intellectual functioning within the current educational context.

However, the findings also reveal that social and emotional-oriented assessment approaches made statistically significant and unique contributions to the model, even after controlling for cognitive assessment effects. This result highlights that holistic learner competence cannot be fully explained by academic assessment alone. Instead, it reinforces the need for assessment systems that intentionally integrate cognitive, social, and emotional dimensions. The evidence suggests that when assessment practices address collaboration, communication, self-regulation, and emotional awareness alongside cognitive skills, they contribute meaningfully to learners’ comprehensive development. Consequently, effective competency-based assessment frameworks should balance these domains to ensure that learner evaluation aligns with the broader goals of holistic education.

Structural Equation Modeling Results

Structural equation modeling was applied to examine direct and indirect effects of assessment practices on learner competencies.

Table 4: Standardized Direct Effects from SEM Analysis

Pathway	Standardized β	p-value
Assessment practices → Cognitive competence	.52	<.001
Assessment practices → Social competence	.37	<.001
Assessment practices → Emotional competence	.33	<.001
Assessment practices → Learner engagement	.48	<.001
Learner engagement → Holistic competence	.44	<.001

The results of the structural equation modeling (SEM) provide compelling evidence regarding the influence of assessment practices on various dimensions of learner competence. Specifically, the findings indicate that assessment practices exert strong and statistically significant direct effects on learners' cognitive competence, suggesting that carefully structured assessments enhance students' knowledge acquisition, critical thinking, and problem-solving abilities. In contrast, the direct effects of assessment practices on social and emotional competencies are moderate, implying that while assessment contributes to the development of collaboration, communication, empathy, and emotional regulation, these domains may also be influenced by additional contextual or pedagogical factors beyond assessment alone.

Most importantly, the SEM results reveal a significant pathway from assessment practices to learner engagement. This finding underscores the role of thoughtfully designed assessment approaches in actively involving students in the learning process, promoting attentiveness, participation, and intrinsic motivation. Furthermore, learner engagement demonstrates a meaningful effect on holistic competence, encompassing cognitive, social, and emotional domains, thereby confirming its mediating role in the model. In other words, assessment practices contribute to the development of well-rounded learner outcomes not only through direct effects but also indirectly by fostering engagement, which in turn amplifies overall competence.

Overall, the structural model highlights the multifaceted impact of assessment on student learning, emphasizing that assessment functions both as a direct instructional tool and as a mechanism for promoting deeper involvement in the educational process. The model fit indices support the adequacy of the proposed framework, with values indicating acceptable fit: the chi-square to degrees of freedom ratio (χ^2/df) is below 3, the Comparative Fit Index (CFI) exceeds .90, and the Root Mean Square Error of Approximation (RMSEA) is below .08. Collectively, these results provide strong empirical support for the role of assessment practices in shaping cognitive, social, and emotional competencies, mediated by active learner engagement.

Model fit indices indicated acceptable fit ($\chi^2/df < 3$, CFI $> .90$, RMSEA $< .08$).

Path Analysis: Mediation Effects

Path analysis was conducted to test the mediating role of emotional competence in the relationship between assessment practices and academic performance.

Table 5: Mediation Analysis Results

Pathway	Direct Effect	Indirect Effect	Total Effect
Assessment → Academic performance	.31	—	.31
Assessment → Emotional competence → Academic performance	.19	.12	.31

The mediation analysis provides valuable insights into the underlying mechanisms through which assessment practices influence academic performance. The results indicate that emotional competence serves as a partial mediator in this relationship, suggesting that the effect of assessment practices on academic outcomes is not solely direct but also operates indirectly through the development of learners' emotional skills. Specifically, assessment practices exert a direct and statistically significant positive effect on academic performance, reflecting that well-structured, competency-based, and multi-dimensional assessments contribute to improved knowledge acquisition, understanding, and overall academic achievement.

At the same time, a considerable portion of the impact of assessment practices is channeled through learners’ emotional competence. This implies that when assessments are thoughtfully designed to engage students, provide constructive feedback, and foster self-awareness, empathy, and emotional regulation, they indirectly enhance academic performance by strengthening these emotional capacities. Emotional competence, therefore, functions as a critical mechanism linking the design and implementation of assessment practices to academic success, highlighting that cognitive outcomes are intertwined with affective development.

These findings underscore the importance of integrating emotional development within assessment frameworks. They suggest that educators and policymakers should not view assessment merely as a tool for measuring knowledge, but also as a means of promoting holistic learner growth, where cognitive achievements are supported and reinforced by emotional and social skills. By acknowledging the mediating role of emotional competence, this study emphasizes that interventions aimed at improving academic outcomes should simultaneously nurture students’ emotional capacities, ultimately creating a more balanced and effective learning environment.

Qualitative Results: Contextual Barriers

Qualitative findings from teacher interviews are summarized in the following table.

Table 6: Contextual Barriers to Implementing Multi-Dimensional and Competency-Based Assessment

Theme	Description
Limited teacher preparation	Insufficient training in competency-based assessment design and scoring
Teachers’ commitment and dedication	Variability in motivation and workload management
Resource shortages	Lack of assessment materials, large class sizes
Inconsistent school-level support	Weak instructional leadership and follow-up
Examination-oriented system	Misalignment with high-stakes national exams

The qualitative findings of the study highlight several human and institutional factors that constrain the effective implementation of multi-dimensional and competency-based assessment practices in secondary schools. On the human side, limited professional preparation emerges as a significant barrier. Many teachers lack targeted training in designing, administering, and interpreting competency-based assessments, which restricts their ability to implement innovative assessment strategies effectively. Additionally, the prevalence of heavy teaching workloads further diminishes teachers’ capacity to engage in the planning and execution of complex, multi-dimensional assessments. When educators are overburdened with large classes, extensive grading responsibilities, and administrative duties, the time and cognitive resources necessary for reflective and student-centered assessment practices are severely constrained.

Institutional factors also play a critical role in limiting the adoption of holistic assessment approaches. Resource shortages—such as insufficient teaching materials, lack of technology support, and inadequate classroom infrastructure—impede teachers’ ability to conduct assessments that go beyond traditional written tests. Furthermore, the prevailing examination-driven accountability system places a disproportionate emphasis on standardized test scores, creating pressure to prioritize summative, performance-based evaluations over formative, competency-focused assessments. This systemic focus on measurable outcomes discourages teachers from experimenting with alternative

assessment approaches that emphasize social, emotional, and higher-order cognitive competencies.

Taken together, these findings suggest that the challenges to implementing multi-dimensional and competency-based assessment are not merely the result of individual teacher limitations but are embedded within broader institutional and systemic structures. Addressing these barriers requires comprehensive interventions, including targeted professional development, workload management, provision of adequate resources, and reform of accountability policies to support holistic, student-centered assessment practices. Without such systemic changes, efforts to enhance assessment practices at the classroom level may remain limited in their impact on learner development.

DISCUSSION

The findings of this study reaffirm the central importance of multi-dimensional and competency-based assessment approaches in fostering holistic learner development, encompassing cognitive, social, and emotional domains. Consistent with contemporary assessment theory, which emphasizes assessment *for* learning rather than assessment *of* learning (Black & Wiliam), the predominance of formative assessment practices observed in secondary schools of West Hararghe Zone suggests a gradual shift toward learner-centered evaluation. Teachers' increased use of continuous assessment, classroom questioning, peer assessment, and feedback-oriented practices reflects growing awareness of the pedagogical value of formative assessment in supporting learning processes. However, the relatively limited application of systematically designed, competency-aligned assessment tools indicates that implementation remains partial and uneven. This gap mirrors concerns raised in the literature that, while policy frameworks increasingly promote competency-based education, classroom-level practices often lag behind due to limited assessment literacy and structural constraints.

The strong predictive effect of multi-dimensional and competency-based assessment approaches on learners' cognitive competence is well aligned with prior empirical studies demonstrating that formative feedback, authentic assessment tasks, and performance-based evaluations significantly enhance higher-order thinking, problem-solving, and conceptual understanding (Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D., 2020). Constructivist learning theorists argue that assessments that require learners to apply knowledge in meaningful contexts promote deeper cognitive processing and knowledge transfer (Brookhart, 2013). Similarly, research on assessment for learning highlights that timely, specific, and actionable feedback enables learners to regulate their learning, identify gaps, and develop metacognitive skills (Black & Wiliam, 1998). The present findings extend this body of knowledge by providing context-specific evidence from secondary schools in West Hararghe Zone, showing that when assessment moves beyond rote testing toward competency demonstration, learners' cognitive development is substantially strengthened.

The moderate yet significant effects of assessment practices on social and emotional competencies further underscore the broader developmental potential of multi-dimensional assessment. Previous studies in educational psychology have emphasized that assessment practices which incorporate collaboration, self-reflection, peer interaction, and real-life problem-solving can cultivate communication skills, empathy, self-confidence, and emotional regulation (Shepard, 2000). The findings of this study suggest that, although current assessment practices contribute to these non-cognitive outcomes, their impact is less pronounced than on cognitive competence. This may be attributed to the continued dominance of academically oriented assessment criteria and the limited intentional

integration of social and emotional learning indicators into assessment design. The literature consistently argues that social and emotional competencies develop most effectively when they are explicitly targeted, assessed, and reinforced within classroom practices, rather than treated as secondary by-products of academic instruction (Nitko & Brookhart, 2014).

The mediating role of learner engagement identified in this study provides strong empirical support for theoretical models that conceptualize engagement as a central mechanism linking instructional and assessment practices to learning outcomes (Hattie, 2009). Engagement theories posit that cognitive, behavioral, and emotional engagement are essential pathways through which educational interventions exert their effects. In line with this perspective, the findings indicate that multi-dimensional and competency-based assessment approaches enhance learner outcomes partly by increasing students' active participation, motivation, and sense of ownership over learning. This aligns with previous research showing that authentic and formative assessments foster higher levels of engagement by making learning goals transparent, valuing student voice, and encouraging self-assessment and reflection (Fredricks, Blumenfeld, & Paris, 2004).

Similarly, the partial mediating effect of emotional competence on academic performance reinforces well-established evidence on the interdependence between emotional well-being and cognitive achievement. Educational psychology literature consistently demonstrates that learners with stronger emotional regulation, self-efficacy, and resilience are better positioned to cope with academic challenges, persist in learning tasks, and achieve higher performance (Ryan & Deci, 2000). The present study contributes to this literature by empirically confirming that assessment practices influence academic outcomes not only directly but also indirectly through their impact on learners' emotional competencies. This finding highlights the need for assessment systems that are sensitive to learners' emotional experiences and that promote supportive, low-anxiety learning environments.

The contextual barriers identified through qualitative findings reflect systemic and structural challenges commonly reported in low-resource educational settings. Issues such as large class sizes, limited instructional time, insufficient teacher training in competency-based assessment, lack of standardized assessment tools, and pressure to prepare students for high-stakes examinations echo concerns widely documented in the literature on educational reform in developing contexts. These constraints often limit teachers' capacity to implement innovative assessment practices effectively, despite positive attitudes and policy mandates (Guskey, 2015).

Addressing these challenges requires coordinated and multi-level interventions. The literature strongly emphasizes the role of sustained professional development in enhancing teachers' assessment literacy, particularly in designing, implementing, and interpreting competency-based assessments. School leadership is also critical in creating supportive environments that encourage experimentation, collaboration, and reflective practice. At the policy level, alignment between curriculum, assessment, and examination systems is essential to ensure that competency-based approaches are not undermined by traditional, exam-driven accountability structures. Overall, the findings of this study support existing scholarship while adding contextually grounded evidence that underscores the transformative potential of multi-dimensional and competency-based assessment when systemic barriers are adequately addressed.

CONCLUSION AND RECOMMENDATIONS

This study provides empirical evidence that multi-dimensional and competency-based assessment approaches significantly contribute to secondary school learners' cognitive,

social, and emotional development in West Hararghe Zone, Oromia regional state. Integrated assessment systems that move beyond traditional examinations foster learner engagement and holistic competencies.

Based on the findings from the current research, the study recommends targeted professional development programs to enhance teachers' assessment literacy, improved allocation of pedagogical and assessment resources, and strengthened school-level support mechanisms across all secondary schools. Policymakers and educational leaders should also ensure alignment between curriculum, assessment, and examination systems to sustain the adoption of holistic assessment practices. Future research may explore longitudinal effects of competency-based assessment and examine student and parent perspectives to further enrich understanding.

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