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Repositioning Bloom's Taxonomy in University Assessment: Advancing Competence, Higher-Order Thinking, and Authentic Learning in Uganda

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Abstract*: Bloom's Taxonomy remains a foundational epistemological and pedagogical framework for conceptualising educational objectives, guiding teaching and structuring assessment in higher education. Its revision by Anderson and Krathwohl repositioned cognitive development as a progression from remembering and understanding to applying, analysing, evaluating and creating, strengthening alignment between learning outcomes, pedagogy and assessment. This paper critically examines the institutionalisation, pedagogical utility and transformative potential of Bloom's Taxonomy in university teaching and assessment in Uganda, with comparative reference to selected international higher education contexts. A conceptual, documentary and comparative review methodology was employed, synthesising institutional policies, assessment frameworks, scholarly literature and documented practices from Makerere University, Kyambogo University, Islamic University in Uganda and Kabale University, alongside evidence from South Africa, Canada, the United States, the United Kingdom and Australia. Findings indicate substantial but uneven institutionalisation, ranging from explicit curriculum alignment to course-level application. The analysis demonstrates that Bloom's significance extends beyond question classification to supporting higher-order thinking, authentic performance, competence development, metacognition and ethical judgement, particularly when integrated with constructive alignment and competence-based education. The paper consequently proposes a Ugandan University Holistic Assessment Framework, extending cognitive progression into knowing, understanding, applying, analysing, evaluating, creating, valuing, doing, reflecting and becoming. The framework positions assessment as a developmental and transformative process for cultivating intellectually capable, ethically grounded, reflective and professionally competent graduates in Uganda.*

Keywords: Bloom's Taxonomy; higher education; assessment; competence-based education; Uganda; higher-order thinking; holistic assessment.

Introduction

The university students' assessment is not merely a technical procedure for measuring what students have learned; it is a powerful epistemological and pedagogical mechanism that defines what counts as worthwhile knowledge. The assessment shapes how students learn, and influences the capabilities that universities ultimately certify (Wang et al., 2026). In higher education, the assessment system functions as a form of institutional communication: it signals to students which forms of knowledge, reasoning, performance and conduct deserve intellectual investment. Consequently, the question of how universities assess learning is inseparable from the broader question of what kind of graduate the university intends to produce (Wobbe & Stoddard, 2023). A curriculum may articulate aspirations for critical thinking, creativity, innovation, professional competence, ethical reasoning and lifelong learning, yet these aspirations acquire educational reality only when they are translated into teaching and assessment practices capable of generating valid evidence of such learning.

This observation provides the principal motivator for reconsidering Bloom's Taxonomy in contemporary university assessment (Ganaka, 2025). The expansion of higher education, massification of student enrolment, digital transformation, competence-based education and the emergence of generative artificial intelligence have fundamentally altered the assessment environment. Universities increasingly operate at the intersection of two competing imperatives. There is a need to assess large numbers of students efficiently and consistently, and the obligation to establish whether graduates can think, perform, create, judge, communicate, collaborate and solve authentic problems (English, 2006). Multiple-choice questions (MCQs), for example, offer considerable advantages in large-scale assessment because they permit broad content sampling, efficient administration and relatively consistent scoring. Yet efficiency in measurement does not automatically guarantee comprehensiveness in demonstrating competence. The central scholarly challenge is therefore not whether objective testing should be retained or abandoned, but how different assessment modalities can be deliberately orchestrated to generate sufficiently rich evidence of learning across levels and dimensions of human capability (Perez-Escamilla et al., 2024).

This challenge becomes particularly consequential in Uganda, where higher education is increasingly being repositioned towards competence-based education. The National Council for Higher Education has recently advanced competence-based education

reforms, including minimum standards addressing curriculum design, teaching and learning. Assessment is a faculty development, quality assurance and industry and community linkages (A, 2026). Such reforms place assessment at the centre of the transition from an education system predominantly concerned with the transmission and reproduction of knowledge towards one concerned with the meaningful mobilisation of knowledge, skills, values and dispositions in authentic contexts (Demetrios & Claudia, 2025). Recent scholarship on Ugandan higher education similarly identifies the alignment of curriculum, pedagogy and assessment as a critical issue in the implementation of competence-based education.

It is within this intellectual and policy context that Bloom's Taxonomy acquires renewed significance. Originally developed by Bloom and colleagues in 1956 as a framework for classifying educational objectives, the taxonomy provided educators with a systematic language for differentiating levels of cognitive complexity (Bielik et al., 2023). Its revised formulation by Anderson and Krathwohl reconceptualised the cognitive process dimension as remembering, understanding, applying, analysing, evaluating and creating, thereby shifting attention from static categories of educational objectives towards observable processes of knowledge use. The revised taxonomy has subsequently become an important resource for articulating learning outcomes, designing instructional activities and constructing assessment tasks across higher education.

The theoretical significance of the taxonomy, however, lies not simply in its hierarchical ordering of cognitive processes. Its deeper value emerges when it is integrated with constructive alignment theory, which conceptualises effective educational design as a coherent relationship among intended learning outcomes, teaching and learning activities, and assessment (May & Auer, 2026). From this perspective, Bloom's Taxonomy can provide the cognitive architecture through which intended levels of learning are translated into observable assessment evidence, while constructive alignment provides the systemic principle through which outcomes, pedagogy and assessment are made mutually reinforcing (Bernstein & Phillips, 2025). The theoretical synergy is therefore important: Bloom's Taxonomy answers the question of the complexity of learning to be demonstrated, whereas constructive alignment addresses the coherence between what is intended, taught and assessed.

This theoretical relationship becomes particularly important when considering MCQs. The conventional assumption that MCQs necessarily measure only lower-order cognition is increasingly difficult to sustain (Schoenberg & Scott, 2026). Carefully designed selected-response items can present complex scenarios, require interpretation of data, demand application of principles and engage aspects of analytical reasoning. Nevertheless, empirical research involving university teachers indicates that although MCQs can assess higher-order cognition, their practical use tends to concentrate on application and analysis. Assessment with MCQs provide an evaluation and creation, presenting substantially greater challenges for a selected-response format (Lahby et al., 2026). The implication is not that MCQs are pedagogically deficient, but that no single assessment modality should be expected to provide complete evidence of the full spectrum of learning.

The distinction is critical because cognitive complexity should not be confused with item difficulty. A difficult question is not necessarily a higher-order question, just as a relatively accessible question may require sophisticated reasoning. The process of assessment places students within an unfamiliar, authentic or ambiguous context (Schoenberg & Scott, 2026). Consequently, the scholarly task is to move assessment design beyond the superficial allocation of examination questions to Bloom's categories and towards a more sophisticated consideration of cognitive demand, authenticity, disciplinary practice, competence, validity and evidentiary sufficiency (Blanchard et al., 2026a). Such an approach requires universities to ask not merely, *"At what level of Bloom's Taxonomy is this question?"* but rather, *"What claim about student capability does this assessment make, what evidence supports that claim, and is the selected assessment modality capable of producing that evidence?"*

This paper consequently advances a reconceptualisation of Bloom's Taxonomy from a question-classification device to an integrated assessment architecture (Blanchard et al., 2026a). Its central proposition is that Bloom's framework should be embedded within a broader system of constructive alignment in which cognitive progression is connected to competence development and authentic performance. MCQs can provide efficient evidence of remembering, understanding, applying and, under carefully designed conditions, aspects of analysis (Wang et al., 2026). The structured questions and essays can provide evidence of reasoning and argumentation; projects and portfolios can illuminate integration and creation; practical demonstrations can establish performance competence; presentations and oral examinations can reveal communication and professional judgement; while reflective, peer and self-assessment can contribute evidence concerning metacognition, self-regulation and reflective learning.

The paper lies in moving beyond the conventional use of Bloom's Taxonomy as a linear hierarchy for writing examination questions and proposing its repositioning (Spencer, 2026). As holistic university assessment architecture for competence-oriented higher education in Uganda. The paper extends the conventional cognitive progression of *remembering–understanding–applying–analysing–evaluating–creating* into a broader developmental trajectory of knowing (Spalding et al., 2026). understanding, applying, analysing, evaluating, creating, valuing, doing, reflecting and becoming. This extension does not claim that the additional dimensions constitute levels within Bloom's original cognitive taxonomy. It rather proposes a conceptual synthesis through which cognitive development can be connected to affective orientation, practical performance, metacognition, professional identity and holistic human development in Uganda

Methodology

This paper adopts a singular methodology that enabled the collection of qualitative data through a documentary and integrative review methodology. It synthesizes foundational works on educational objectives and taxonomy; peer-reviewed literature on MCQ validity, reliability, higher-order thinking and student assessment utility (Woolfolk & Margetts, 2012). The literature on constructive alignment and competence-based education; official institutional documents from Ugandan universities; and current information from NCHE concerning competence-based reform. Documentary evidence was selected purposively for relevance, institutional authority and direct connection to assessment practice (Kuo et al., 2026).

Research Design

This paper further used a case research design to conceptualize the Bloom's Taxonomy principle in assessing the students' performance. It is through a documentary and comparative research design to critically examine the positioning of Bloom's Taxonomy within university teaching and assessment, with particular emphasis on Uganda and selected international higher education contexts (Woldegiorgis & Yu, 2024). The design was appropriate because the study sought to interrogate how Bloom's Taxonomy has been conceptualised, institutionalised and operationalised within assessment policy and practice rather than to estimate the prevalence of a phenomenon through primary quantitative data. The approach also enabled the study to integrate theoretical scholarship, institutional documentation and empirical studies into a coherent conceptual argument concerning the relationship among cognitive complexity, competence development, constructive alignment and authentic assessment (Romlie et al., 2024).

The methodological orientation was interpretivist and analytical. Rather than treating institutional references to Bloom's Taxonomy as evidence of identical levels of implementation, the analysis distinguished between explicit institutional policy adoption, programme-level application, course-level pedagogical use and scholarly engagement (Kusumoriny, 2025). This distinction was important for avoiding overgeneralisation and for establishing the actual depth of institutionalisation within the Ugandan higher education sector.

Documentary and Literature Sources

The study relied primarily on secondary documentary evidence obtained from four complementary sources. The first comprised foundational and theoretical literature on Bloom's Taxonomy, including the original taxonomy developed by Bloom and colleagues and its subsequent revision (DeBoor, 2026). The second comprised scholarship on constructive alignment, competence-based education, authentic assessment, higher-order thinking, assessment validity and holistic student development. The third consisted of publicly accessible institutional documents, including university academic policies, assessment regulations, curriculum frameworks, teaching and learning guidelines, examination manuals, quality-assurance documents and institutional learning resources (Spalding et al., 2026). The fourth consisted of peer-reviewed empirical studies examining Bloom-informed assessment, MCQs and higher-order cognitive assessment in Uganda and internationally.

Particular attention was given to documentary evidence associated with Makerere University, Kyambogo University, Islamic University in Uganda and Kabale University, together with documented higher education research from South-Western Uganda. For international comparison, evidence was examined from selected institutions in Africa, North America, Europe and Australia where Bloom's Taxonomy has been documented in relation to learning outcomes, curriculum design, teaching or assessment (Valayil, 2021). Institutional examples were included only where identifiable documentary or scholarly evidence was available.

Document Selection Criteria

Documents were purposively selected according to four criteria: relevance, institutional authenticity, scholarly credibility and evidentiary specificity. Documents were considered relevant when they addressed Bloom's Taxonomy, university assessment, learning outcomes, higher-order thinking, competence-based education or constructive alignment (J et al., 2022). Institutional documents were prioritized where they originated from official university or regulatory sources. Peer-reviewed publications were prioritised for empirical and theoretical claims, while institutional websites and policy documents were used principally to establish documented institutional practices.

The review distinguished between documents that merely mention or recommend Bloom's Taxonomy and those demonstrating its substantive use in curriculum mapping, learning-outcome formulation, assessment design or examination construction. This distinction strengthened the validity of conclusions concerning institutional adoption.

Comparative Analysis

A cross-institutional comparative approach was employed to identify similarities and differences between Ugandan and selected international higher education contexts. The comparison did not assume that institutions operate under equivalent regulatory, demographic or pedagogical conditions (Hamilton et al., 2023). Instead, it examined how Bloom's Taxonomy functions across different institutional contexts and the extent to which it is incorporated into assessment policy, curriculum design and teaching practice.

The comparison focused on three principal questions: whether Bloom's Taxonomy was explicitly recognised; how it was translated into assessment practice; and whether its application extended beyond cognitive classification towards competence, authentic performance and higher-order learning (Blanchard et al., 2026b). This approach enabled the study to identify both transferable principles and context-specific considerations relevant to Uganda.

Analysis of Multiple-Choice Questions

Because MCQs constitute a major concern of the paper, their methodological treatment was undertaken through a cognitive-demand and validity perspective (Abu-Shaheen et al., 2025). The analysis examined the extent to which MCQs can provide evidence of different levels of Bloom's revised taxonomy. Particular attention was given to item characteristics such as contextualisation, stimulus complexity, interpretation of data, application of principles, scenario-based reasoning and distractor quality.

The analysis consequently distinguished between recall-oriented MCQs and higher-order MCQs. The latter were considered capable of eliciting application and aspects of analysis when students are required to interpret information, diagnose situations, select appropriate solutions or apply disciplinary principles to unfamiliar contexts (Kusumoriny, 2025). At the same time, the study recognised that selected-response formats have structural limitations in directly demonstrating extended creation, practical performance, sustained argumentation, professional judgement and some affective outcomes. MCQs were therefore analysed as one component of an assessment system rather than as a universally sufficient assessment instrument.

Conceptual Synthesis and Framework Development

The final analytical stage involved conceptual synthesis, through which findings from Bloom's revised taxonomy, constructive alignment, competence-based education and authentic assessment were integrated into a proposed Ugandan University Holistic Assessment Framework.

The framework extends the conventional cognitive progression of Bloom's revised taxonomy remembering, understanding, applying, analysing, evaluating and creating into a broader developmental conception incorporating valuing, doing, reflecting and becoming (Magolda et al., 2023). These additional dimensions are not presented as extensions of Bloom's original taxonomy; rather, they constitute a conceptual integration with affective development, practical competence, metacognition, professional identity and authentic learning.

Trustworthiness and Scholarly Rigour

Several measures were employed to enhance the trustworthiness of the analysis. First, claims concerning institutional adoption were triangulated across institutional documents and peer-reviewed literature wherever possible (Lan & Yang, 2026). Second, the study differentiated between documented evidence and conceptual interpretation, thereby avoiding the presentation of theoretical propositions as empirical findings. Third, institutional examples were not interpreted as representative of all Ugandan universities unless sufficient evidence justified such generalization. Fourth, the analysis retained contradictory or limiting evidence about the use of Bloom's Taxonomy and MCQs rather than selectively reporting supportive evidence.

The methodological approach also recognised that documentary research is dependent upon the availability, accessibility and quality of institutional records (Blaylock, 2013). The absence of publicly available evidence was therefore not interpreted automatically as evidence that an institution does not use Bloom's Taxonomy. Instead, conclusions were restricted to what could be substantiated through accessible documentary and scholarly evidence.

Ethical Considerations

Since the study relied principally on publicly available documents and published scholarly literature, it did not involve direct recruitment of human participants or collection of identifiable personal data (Abu-Shaheen et al., 2025). Ethical responsibility nevertheless remained central to the research process. Institutional practices were represented accurately, sources were appropriately acknowledged, claims were not attributed to institutions without documentary evidence, and interpretations were distinguished from documented institutional positions. Copyright, intellectual property and academic integrity requirements were observed throughout the documentary review.

Results of the findings

The documentary and comparative review established that Bloom's Taxonomy has a substantial and identifiable presence in university teaching, curriculum development and assessment discourse (Blaylock, 2013). Still, the depth of institutionalisation varies considerably across institutions and national contexts. The evidence does not support treating every documented reference to Bloom's Taxonomy as equivalent to formal institutional adoption. Instead, four analytically distinct forms of incorporation emerged: formal institutional incorporation; faculty, programme or course-level incorporation; documented scholarly application; and scholarly advocacy.

This distinction constitutes an important finding of the study because the presence of Bloom's Taxonomy in a course, research article or teaching resource does not necessarily demonstrate that an entire university has adopted it as an institutional assessment policy

(Buckley et al., 2018). The analysis therefore interpreted institutional evidence according to its degree of formalisation, scope of application and proximity to actual assessment practice.

A further finding was that the contemporary relevance of Bloom's Taxonomy in Uganda is being strengthened by the national transition towards competence-based education (Woolfolk & Margetts, 2012). The National Council for Higher Education's current competence-based education reforms identify assessment as one of the central domains requiring institutional alignment (Yadav, 2026). Assessment is linked to curriculum design, teaching and learning, faculty development, quality assurance, monitoring and evaluation, and industry and community linkages.

Institutionalisation of Bloom's Taxonomy in Uganda

The evidence revealed a continuum rather than a uniform pattern of institutional adoption. Makerere University provided the strongest identifiable evidence of formal institutional incorporation (Marciano & Ramello, 2026). Other universities demonstrated programme-level, discipline-specific or scholarly engagement, but the available public evidence was insufficient to classify all of them as having university-wide Bloom-based assessment policies.

Institution	Principal evidence identified	Evidentiary classification
Makerere University	2025 Academic Policies Manual explicitly links selected online assessment forms to application, analysis, evaluation and creation levels of Bloom's Taxonomy	Formal institutional incorporation
Kabale University	University-affiliated scholarship examining Bloom's Taxonomy in higher education and its application to graduate capabilities	Documented scholarly application
Kyambogo University	Teaching/curriculum resources linking Bloom's Taxonomy with learning objectives and assessment	Programme/instructional incorporation
Islamic University in Uganda	University-affiliated scholarship applying Bloom's Taxonomy to instructional planning and assessment in Islamic Education	Discipline-level scholarly application
Bishop Stuart University	Current university-affiliated scholarship addressing Bloom's Taxonomy and competence-based assessment	Scholarly application/discourse
Other Ugandan universities	References in scholarly publications, repositories and teaching resources, but insufficient publicly accessible evidence of institution-wide policy adoption	Evidence requiring further verification

The most important finding is therefore not that Bloom's Taxonomy has been universally institutionalized in Ugandan universities, but that its influence is demonstrably distributed across different layers of the higher education system.

Evidence of Formal Institutional Incorporation

Makerere University emerged as the clearest Ugandan case of formal institutional incorporation. Its approved Academic Policies Manual 2025 contains explicit guidance concerning online assessment and specifies that take-home papers and open-book examinations should use appropriately designed questions that do not depend excessively on memory and recall. Instead, questions are to employ verbs associated with the application, analysis, evaluation and creation levels of Bloom's Taxonomy (Chen & Li, 2026).

This finding is significant because it moves Bloom's Taxonomy beyond individual lecturer preference into institutionally documented assessment guidance. The policy also recognises multiple forms of online assessment, including take-home and open-book examinations, online quizzes, essays, case studies, reports, presentations, group projects, debates, electronic portfolios, reflective activities, peer and self-assessment, simulations, role play and oral presentations (Al-Sartawi et al., 2025).

The evidence consequently suggests a movement from a predominantly examination-centred conception of assessment towards a more diversified assessment ecology in which different instruments can generate different forms of evidence of learning.

Particularly significant is Makerere's treatment of MCQs. Its 2025 policy identifies MCQs as efficient for rapid testing of factual knowledge and large cohorts while also recognising that appropriately designed questions can assess higher-level thinking, including situations where alternatives are closely related and students must exercise decision-making (Lahby et al., 2026).

The finding is therefore nuanced: Makerere's policy does not reject MCQs; rather, it differentiates their purposes and cognitive possibilities within a broader assessment system.

Bloom's Taxonomy and Digital Assessment

The documentary evidence further established that the relevance of Bloom's Taxonomy has expanded with the digitalisation of university assessment. The important issue is not whether an assessment is delivered online or physically, but the cognitive operation required of the learner.

A digital quiz asking students to identify, define or recall information primarily generates evidence of remembering. Conversely, an online scenario requiring students to interpret evidence, diagnose a problem, compare alternatives and justify a decision can generate evidence of higher cognitive processing (Chui et al., 2026).

The finding therefore challenges the assumption that technological transformation automatically constitutes pedagogical transformation. Digitising a low-level examination does not necessarily create higher-order learning (Kusumoriny, 2025). The cognitive architecture of the task remains more consequential than the technological platform through which it is delivered.

However, the documentary analysis established an important evidentiary qualification: the study's authors' institutional affiliations cannot, by themselves, establish that Kabale University was one of the three institutions studied or that the university had formally adopted Bloom's Taxonomy institution-wide. Accordingly, the study is interpreted here as evidence of scholarly engagement with Bloom-informed higher education in Uganda rather than conclusive evidence of university-wide institutional adoption (Escuriet et al., 2025).

This distinction strengthens rather than weakens the analysis because it prevents institutional affiliation from being incorrectly equated with institutional policy.

Instructional and Programme-Level Application

The evidence associated with Kyambogo University indicates that Bloom's Taxonomy is used in relation to learning-objective formulation, curriculum development and assessment planning (Woolfolk & Margetts, 2012). The available instructional material connects measurable learning objectives with cognitive processes and encourages the selection of appropriate action verbs.

The finding suggests that Bloom's framework has practical utility in teacher education and instructional design at Kyambogo University. However, the available evidence does not independently establish a comprehensive university-wide assessment policy mandating Bloom-based examination design (Escuriet et al., 2025).

Kyambogo is therefore best interpreted as demonstrating instructional and programme-level incorporation, rather than formal institutional adoption.

Discipline-Level Application

The documentary evidence also identified university-affiliated scholarship at the Islamic University in Uganda in which Bloom's Taxonomy is applied to Islamic Education.

The evidence positions Bloom's framework as useful for establishing instructional objectives, formulating learning outcomes, selecting content and teaching methods, developing learning materials, assessing students and evaluating learning progress (DeBoor, 2026).

The finding is significant because it demonstrates that Bloom's Taxonomy can operate as an integrated pedagogical framework, rather than simply as a taxonomy for categorising examination questions.

Nevertheless, the available evidence is discipline-specific. It therefore supports the conclusion that Bloom's Taxonomy has been academically and pedagogically applied within IUIU, but does not independently establish institution-wide adoption.

Bloom's Taxonomy and the Architecture of University Assessment

Across the documentary evidence, a consistent pattern emerged concerning the relationship between Bloom's cognitive processes and assessment modalities.

Revised Bloom process	Dominant cognitive activity	Illustrative assessment evidence
Remember	Retrieve and recognise information	MCQs, definitions, identification, short-answer questions
Understand	Explain, interpret and summarise meaning	Explanations, summaries, interpretations
Apply	Use knowledge in a specific situation	Calculations, problem-solving, demonstrations, scenarios
Analyse	Examine relationships, components and evidence	Case studies, comparative analysis, data interpretation
Evaluate	Make and justify evidence-based judgements	Critical essays, critiques, debates, reviews
Create	Generate, design or produce something new	Research projects, designs, innovations, models

The central finding is that there is no necessary one-to-one relationship between a Bloom level and a particular assessment instrument. MCQs, for example, can operate beyond remembering when items incorporate complex scenarios, data interpretation or decision-making. Similarly, an essay does not automatically constitute higher-order assessment simply because it requires an

extended written response (Jared et al., 2026). Assessment quality therefore depends on the cognitive demand embedded within the task, rather than merely on the instrument's name.

Multiple-Choice Questions: Efficiency versus Cognitive Breadth

The review established that MCQs retain considerable value in university assessment because they enable broad curriculum sampling, efficient marking, consistency of scoring and assessment of large cohorts. Makerere University's 2025 Academic Policies Manual similarly recognises their efficiency for rapid testing and large-group assessment (Escuriet et al., 2025).

However, the evidence also demonstrates that the pedagogical value of MCQs is strongly dependent upon item construction. Recall-oriented MCQs primarily assess remembering, whereas scenario-based items can assess application and aspects of analysis.

The principal finding is consequently not that MCQs are inherently low-level or inherently high-level. The cognitive level of an MCQ is determined by the mental operation required to answer it, not by the fact that the response format is multiple-choice (*FTCE Earth/Space Science 6–12 Study Guide 2026–2027*, 2026).

Nevertheless, the analysis identifies structural limitations. MCQs provide comparatively limited direct evidence of extended creation, sustained argumentation, practical performance, professional communication, complex ethical reasoning and some affective outcomes. They should therefore constitute one component of a multimodal assessment system rather than the sole evidence of competence.

Constructive Alignment as the Integrating Principle

A major cross-cutting finding was the importance of constructive alignment in translating Bloom's Taxonomy into meaningful assessment practice (Bienvenido-Huertas et al., 2024). For example, if a programme outcome requires students to *analyse causes of organisational failure*, learning activities should provide opportunities for case analysis, while assessment should require students to examine evidence, establish relationships among causal factors and justify their interpretation.

The finding is therefore that Bloom's Taxonomy has greatest educational value when it is embedded within an alignment system, rather than used as an isolated list of action verbs.

Evidence from International Higher Education

The comparative review established that Bloom's Taxonomy has a substantial international presence in higher education. However, the international evidence similarly reveals different degrees of institutionalization assessement of learners academic progress.

Examples include the use of Bloom's Revised Taxonomy in programme learning outcomes, assessment design, curriculum mapping, and examination review. The professional education, digital learning and teaching-and-learning guidance across institutions in Africa, North America, Europe and Australia (Sartawi et al., 2025).

The comparative evidence reveals four recurring international functions:

1. Learning-outcome formulation – using Bloom-aligned verbs to specify expected student capabilities.
2. Assessment design – matching assessment tasks to intended cognitive complexity.
3. Curriculum alignment – connecting outcomes, teaching activities and assessment.
4. Quality assurance – reviewing whether assessment actually measures the level of learning claimed by the curriculum.

The international evidence therefore reinforces the finding that Bloom's Taxonomy has evolved from a classification system into a curriculum and assessment design resource.

Cross-Country Comparative Finding

The comparison between Uganda and selected international contexts reveals an important structural pattern.

Dimension	Uganda	Selected international contexts
Presence of Bloom's Taxonomy	Clearly documented	Widely documented
Individual/course use	Evident	Extensive
Programme-level use	Evident in selected cases	Commonly documented
Explicit institutional policy	Strongest evidence identified at Makerere	Documented across several institutions
Assessment quality assurance	Emerging/documented selectively	More systematically documented
Competence-based integration	Increasingly important under current reforms	Established in many contexts
Multimodal assessment	Increasingly recognised	Broadly established
Holistic assessment architecture	Conceptually under development	More developed in selected institutions

The comparison suggests that Uganda is not starting from an absence of Bloom-informed assessment practice. Rather, the principal opportunity lies in moving from dispersed applications towards systematic institutional alignment of learning outcomes, pedagogy, assessment and graduate competence (Wilfred et al., 2026).

The documentary evidence revealed a significant gap between the recognition of higher-order learning as an educational aspiration and the systematic production of assessment evidence demonstrating that learning.

Universities increasingly articulate expectations for critical thinking, problem-solving, creativity, innovation, communication and professional competence (Ângelo, 2025). Yet the assessment evidence available in institutional documents remains more uneven, particularly concerning the systematic mapping of assessment portfolios across the full cognitive spectrum.

The finding does not imply that Ugandan universities generally assess only recall. Rather, it indicates a need for stronger institutional mechanisms for demonstrating that assessment portfolios collectively provide sufficient evidence across cognitive, practical, affective and reflective dimensions of learning.

Strengths and Limitations of Bloom's Taxonomy in University Teaching and Assessment

Strengths of Bloom's Taxonomy

Bloom's Taxonomy offers several important pedagogical and assessment benefits that explain its sustained relevance in higher education. First, it provides **a** systematic framework for articulating educational objectives and translating broad curricular intentions into observable learning outcomes. The revised taxonomy further facilitates progression from lower-order cognitive processes, such as remembering and understanding, towards applying, analysing, evaluating and creating (Kuo et al., 2026). This progression can assist universities in ensuring that learning outcomes reflect increasing levels of intellectual complexity.

Second, Bloom's Taxonomy provides a useful foundation for constructive alignment among learning outcomes, teaching activities and assessment. When appropriately applied, lecturers can design learning experiences and assessment tasks that correspond with the level of competence expected of students (Heywood, 2006). This is particularly relevant to competence-based education, where the emphasis is increasingly placed on students' ability to apply knowledge to authentic academic, professional and societal problems rather than merely reproduce information.

Third, the taxonomy supports the development and assessment of higher-order thinking skills. Its emphasis on analysis, evaluation and creation provides a basis for encouraging critical inquiry, problem-solving, innovation and independent judgement (Nodia, 2026). These capabilities are increasingly important in Ugandan higher education given the demand for graduates who can respond creatively to complex economic, technological and social challenges.

Fourth, Bloom's Taxonomy provides a common pedagogical language for lecturers, curriculum developers, examination boards and quality-assurance personnel. The use of identifiable cognitive categories can facilitate curriculum review, assessment moderation and professional development (Surma et al., 2025). It can also help institutions identify excessive reliance on recall-oriented assessment and encourage greater use of analytical, problem-based and authentic assessment approaches.

Fifth, the framework is sufficiently flexible to support multiple forms of assessment**.** Although frequently associated with written examinations, its cognitive categories can inform case studies, research projects, presentations, portfolios, simulations, practical assignments and problem-based learning. Its value therefore extends beyond examination-question construction to broader curriculum and assessment design (Uebel et al., 2023).

Finally, Bloom's Taxonomy has considerable potential to contribute to graduate competence and lifelong learning when combined with other pedagogical frameworks. Progression towards analysis, evaluation and creation can support intellectual independence, research capacity, innovation and professional problem-solving (Miner & Beilharz, 2023). Its contribution is therefore potentially transformative when it forms part of an integrated system rather than being used as a stand-alone classification tool.

Limitations of Bloom's Taxonomy

Despite these strengths, Bloom's Taxonomy has significant conceptual and practical limitations that should be recognised in university teaching and assessment. The first is the assumption of a relatively linear hierarchy of learning (Miner & Beilharz, 2023). Although the revised taxonomy presents cognitive processes progressively, actual learning is often recursive and interconnected. Students may analyse, apply and create while simultaneously developing understanding, while sophisticated learning may require movement repeatedly between different cognitive processes. Consequently, the taxonomy should not be interpreted as requiring students to master one level completely before engaging with another.

Second, the taxonomy can encourage the mechanical classification of assessment questions**.** In some university contexts, lecturers may classify questions according to verbs such as *define, explain, analyse, evaluate* or *create* without examining the actual cognitive demand of the task (Kuo et al., 2026). A question containing the verb *analyse*, for example, does not necessarily require genuine analytical thinking. Consequently, Bloom's Taxonomy should guide the design of assessment tasks rather than become a formula for attaching cognitive labels to examination questions.

Third, its traditional emphasis on cognitive processes provides an incomplete representation of holistic learning**.** University education involves not only knowledge and intellectual skills but also values, attitudes, practical capabilities, professional dispositions, ethical reasoning, interpersonal competence and reflective capacity. This limitation is particularly important in professional education, where graduates are expected to demonstrate what they can do, how they behave and how they exercise responsible judgement.

Fourth, Bloom's Taxonomy does not by itself address fundamental assessment-quality principles, including validity, reliability, authenticity, fairness, inclusiveness and transparency (Miner & Beilharz, 2023). An assessment may be positioned at a high cognitive level but still provide weak evidence of learning if it is poorly designed, ambiguously worded or inadequately scored. Bloom therefore needs to be integrated with broader assessment principles and institutional quality-assurance mechanisms.

Fifth, the implementation of higher-order and authentic assessment can present institutional and resource constraints**.** Large classes, limited staffing, inadequate facilities, heavy lecturer workloads and the need for efficient examination administration may encourage continued reliance on traditional written examinations (Rayner et al., 2026). These constraints can make it difficult to provide frequent opportunities for practical performance, projects, portfolios and individualised feedback, particularly in resource-constrained higher education environments.

Sixth, the framework may inadequately capture disciplinary and contextual differences in knowledge and competence. The meaning of analysis, evaluation or creation varies across disciplines. The demonstration of competence in engineering, medicine, education, business, humanities and the creative arts requires different forms of knowledge and performance (Burke, 2005). Bloom's Taxonomy should therefore be interpreted flexibly and contextualised rather than applied uniformly across all academic programmes.

Finally, the taxonomy gives limited explicit attention to metacognition, values, reflection and personal formation. Students may successfully demonstrate cognitive competence without developing the capacity to reflect critically on their learning, regulate their learning processes, act ethically or connect knowledge with social responsibility (Chui et al., 2026). This limitation provides a strong rationale for extending Bloom-informed assessment towards a more holistic conception of university education.

Critical Implication for Ugandan Higher Education

Taken together, these strengths and limitations suggest that Bloom's Taxonomy remains pedagogically valuable but insufficient as a comprehensive theory of university learning and assessment (Rayner et al., 2026). Its principal contribution lies in helping universities articulate and assess increasingly complex cognitive processes; however, its transformative potential depends on how effectively it is integrated with constructive alignment, competence-based education, authentic assessment, metacognition and values-oriented education.

For the Ugandan university context, this analysis supports the proposed Ugandan University Holistic Assessment Framework, which extends the conventional cognitive progression into a broader developmental continuum of knowing, understanding, applying, analysing, evaluating, creating, valuing, doing, reflecting and becoming (Kusumoriny, 2025). Such an extension does not replace Bloom's Taxonomy; rather, it seeks to address dimensions of university learning that the conventional cognitive framework does not sufficiently capture.

Accordingly, Bloom's Taxonomy should be positioned not as a rigid hierarchy for constructing examination questions, but as one component of an integrated assessment architecture**.** Its enduring relevance lies in its capacity to promote intentionality, cognitive progression and alignment, while its limitations demonstrate the need for universities. The principle of bloom's taxonomy it broadens assessment from the measurement of knowledge and cognitive performance towards competence, ethical formation, practical performance, reflection and lifelong development**.**

Discussion

The findings demonstrate that Bloom's Taxonomy continues to possess considerable explanatory and practical value in contemporary university assessment, but its educational significance is greater than its conventional use as a taxonomy for classifying examination questions. The documentary evidence indicates that the framework has progressively moved from a mechanism for categorising educational objectives towards a broader instrument for articulating learning outcomes, designing learning experiences, constructing assessment tasks and examining the cognitive complexity of student performance(Kunnan, 2024). This development is particularly significant in Uganda, where higher education is undergoing a competence-based transformation that places increasing emphasis on what learners can do with knowledge rather than merely what they can recall. The National Council for Higher Education's current competence-based education standards explicitly include assessment among the domains requiring systematic attention, thereby creating a policy environment in which the alignment of learning outcomes, pedagogy and assessment has become increasingly consequential.

The findings therefore support a conceptual repositioning of Bloom's Taxonomy. Rather than treating the six cognitive processes as a checklist for distributing examination questions, universities can employ the taxonomy as a cognitive architecture within a wider assessment system (Taherdoost & Madanchian, 2026). Remembering and understanding remain foundational because complex competence cannot be developed without an adequate knowledge base. However, knowledge acquires educational significance when learners can apply it, interrogate relationships, make reasoned judgements and create solutions. The fundamental contribution of the revised taxonomy is consequently its capacity to make the progression from knowledge possession to knowledge mobilisation more visible within curriculum and assessment design.

This interpretation is consistent with scholarship showing that Bloom-informed design is most educationally meaningful when it is connected to constructive alignment. Evidence from higher education research indicates that deliberately aligning higher-order cognitive tasks with teaching activities can strengthen students' recognition of deep learning and higher-order thinking (Bienvenido-Huertas et al., 2024). The present findings extend this argument to the Ugandan context by suggesting that alignment must occur not only within individual courses but progressively across programmes and institutional assessment systems.

Institutional Adoption Should Be Understood as a Continuum

One of the most significant findings is that institutional engagement with Bloom's Taxonomy should not be conceptualised as a simple binary distinction between adopted and not adopted. The evidence revealed a continuum extending from formal institutional policy through faculty and programme application to scholarly engagement and advocacy (Alexander et al., 2026). This distinction is methodologically and conceptually important because the presence of Bloom's Taxonomy in a lecturer's course or publication cannot automatically be interpreted as institutional adoption.

Makerere University provides particularly strong evidence of formal institutional incorporation. Its approved 2025 Academic Policies Manual explicitly directs the construction of certain take-home and open-book assessment questions towards application, analysis, evaluation and creation, while also recognising multiple forms of assessment beyond conventional examinations.

This finding is important for two reasons. First, it demonstrates that Bloom's Taxonomy can move from individual pedagogical preference into institutional assessment governance (Kusumoriny, 2025). Second, it indicates a broader shift in the philosophy of assessment: the purpose of assessment is increasingly being connected with the demonstration of interpretation, synthesis, analysis and decision-making rather than exclusively with the reproduction of information.

The evidence from other Ugandan universities, however, is more appropriately interpreted as programme-level, disciplinary or scholarly application. This variation should not be regarded simply as an institutional weakness. It may instead reflect the developmental nature of educational reform. Nevertheless, the absence of consistent public evidence of institution-wide adoption points to an important quality-assurance questions (Alexander et al., 2026). How can universities ensure that Bloom-informed assessment principles are consistently translated from policy documents into programme outcomes, course designs, examination blueprints and actual student assessment?

Thus, the challenge facing Uganda is not necessarily the introduction of Bloom's Taxonomy as an entirely new concept. Rather, it is the institutionalisation and quality assurance of principles that are already present in parts of the higher education system.

The Findings Challenge the False Dichotomy between MCQs and Higher-Order Thinking

A particularly important implication concerns the position of multiple-choice questions within university assessment (Kusumoriny, 2025). The findings challenge two opposing but equally problematic assumptions: that MCQs necessarily measure only lower-order cognition, and that carefully designed MCQs can independently measure the entire spectrum of higher-order competence.

The evidence indicates that MCQs are capable of assessing more than simple recall. Makerere University's 2025 academic policy explicitly recognises their efficiency for large groups while also acknowledging that appropriately designed MCQs can assess higher-level thinking, including decision-making (Lahby et al., 2026). International evidence similarly indicates that university teachers perceive MCQs as capable of reaching the apply and analyse levels, although higher-order items generally constitute a relatively small proportion of actual tests.

The pedagogical implication is profound: assessment format does not determine cognitive level by itself. Cognitive demand is created through the relationship between the stimulus, task, alternatives, reasoning required and knowledge context (Taherdoost & Madanchian, 2026). An MCQ asking a student to recall a definition is fundamentally different from an MCQ requiring the interpretation of evidence, diagnosis of a case or selection of an appropriate intervention.

However, the findings simultaneously caution against overstating what MCQs can accomplish. The evidence suggests that MCQs are considerably more constrained when the assessment purpose involves extended evaluation, original creation, sustained argumentation, practical performance or demonstration of professional competence (Blaylock, 2013). The appropriate conclusion is therefore not to remove MCQs from university assessment but to reposition them within a multimodal assessment ecology.

This distinction is particularly relevant to mass higher education. MCQs provide efficiency, scalability and consistency, qualities that are indispensable where universities assess large cohorts (Denham, 2023). Yet efficiency should be treated as an assessment-design consideration rather than as the definition of assessment quality. A technically efficient examination that provides inadequate evidence of the intended competence remains educationally misaligned.

Assessment Validity Is More Important than Assessment Convenience

The findings point to a deeper issue concerning the relationship between assessment efficiency and assessment validity. Universities face genuine logistical constraints: large enrolments, limited academic staff, pressure for rapid feedback, increasing digital delivery and the need for reliable grading. These conditions make objective assessment attractive (Ângelo, 2025). Nevertheless, an assessment instrument should ultimately be judged by the quality and relevance of the evidence it generates concerning the intended learning outcome.

This principle leads to an important distinction between measurement convenience and evidentiary adequacy. MCQs may provide excellent evidence for some claims about learning and inadequate evidence for others (Wilfred et al., 2026). A university cannot reasonably infer that a student has acquired practical competence simply because the student can correctly identify the steps of a practical procedure in a selected-response test. Similarly, identifying the characteristics of ethical leadership does not necessarily demonstrate the capacity to exercise ethical judgement in an ambiguous professional situation.

The assessment instrument must therefore correspond to the claim being made about student capability. This is the deeper meaning of constructive alignment. The question is not simply whether an assessment is reliable or easy to administer, but whether the evidence produced is appropriate for the educational claim.

Constructive Alignment Provides the Missing Bridge

The findings strongly reinforce constructive alignment as the theoretical bridge connecting Bloom's Taxonomy with meaningful assessment. Bloom provides a vocabulary for describing cognitive complexity; constructive alignment provides the systemic logic for ensuring that the intended cognitive complexity is actually taught and assessed (Jared et al., 2026).

A programme outcome requiring students to *evaluate alternative organisational strategies*, for example, cannot be adequately aligned if students spend their learning time primarily memorising theories and are subsequently assessed through recall-oriented questions. Conversely, students are unlikely to demonstrate higher-order competence if teaching and assessment do not provide opportunities to engage with complex problems, evidence, uncertainty and decision-making.

Research on constructive alignment similarly suggests that higher-order cognitive skills are strengthened when learning activities and assessment are deliberately aligned with those cognitive demands (Nodia, 2026). The present study therefore argues that the most productive use of Bloom's Taxonomy is not the isolated identification of verbs but the systematic alignment of cognitive expectations throughout the educational process.

Cognitive Assessment to Competence-Based Assessment

The findings acquire additional significance within Uganda's competence-based education reform. NCHE's 2026 standards for implementing competence-based education and training place assessment among the core areas requiring institutional attention. The implication is that universities must increasingly demonstrate not simply that students have encountered knowledge but that they can mobilise knowledge, skills and other capabilities in meaningful contexts (Abdellah et al., 2025).

Bloom's Taxonomy can contribute to this transition, but it cannot accomplish it alone. A cognitive taxonomy is fundamentally concerned with forms of thinking; competence is broader. Competence involves the integration of knowledge, skills, judgement, attitudes, values and performance in context. Consequently, the present findings support a theoretical synthesis rather than a simple extension of Bloom's original taxonomy (Uebel et al., 2023).

Knowing and *understanding* establish the epistemic foundation; *applying, analysing, evaluating and creating* represent increasingly complex cognitive operations. The article *values* connect learning with dispositions and ethical orientation; *doing* establishes practical performance; *reflecting* introduces metacognition and self-regulation; and *becoming* captures the longer-term formation of professional identity and responsible citizenship (Taherdoost & Madanchian, 2026).

The Importance of Authentic Assessment

The findings further suggest that the transition towards competence-based education requires universities to increase the use of authentic assessment. Authentic assessment does not simply mean making an assessment difficult or realistic-looking. It requires learners to mobilise knowledge and skills in situations that resemble, simulate or meaningfully represent professional, disciplinary or societal practice.

This is where the limitations of any single assessment method become most visible. A project can provide evidence of creation and integration; a practical demonstration can establish performance; an oral examination can reveal reasoning and communication; a

portfolio can document development over time; a case study can reveal analysis and judgement; and reflective assessment can illuminate metacognition.

The implication is that assessment diversification should not be confused with assessment multiplication. The objective is not to increase the number of assignments imposed upon students, but to select complementary assessment methods that collectively provide sufficient evidence of the intended competence. An intelligently designed assessment portfolio may therefore be more educationally defensible than a large number of repetitive examinations.

The Findings Have Important Implications for students' learning

The emergence of generative artificial intelligence further strengthens the case for assessment redesign. When students can obtain sophisticated textual explanations, summaries, solutions and other outputs from AI systems, assessment based predominantly on easily reproducible or externally generated products may provide increasingly uncertain evidence of individual learning.

This does not make traditional assessment obsolete. Rather, it makes the quality of the assessment claim more important. Tasks requiring students to explain their reasoning, interpret local evidence, demonstrate practical performance, defend decisions orally, document development through portfolios or reflect upon their own learning can generate forms of evidence that are more difficult to outsource without understanding.

Bloom's Taxonomy can contribute to this transformation by encouraging movement beyond simple recall. However, the most defensible response to AI is not simply to increase examination difficulty. It is to design assessment that requires authentic cognition, contextual application, personal reasoning, performance and reflection.

Thus, AI should not be treated merely as a technological threat to assessment. It can be understood as a catalyst for confronting weaknesses that already existed in assessment systems—particularly the over-reliance on tasks that measure reproduction rather than demonstrated capability.

Implications for Programme and Institutional Quality Assurance

Another important finding concerns the level at which assessment reform should occur. If Bloom’s Taxonomy is applied only by individual lecturers, its influence remains fragmented. The evidence suggests a stronger approach in which institutions embed cognitive and competence expectations across the entire assessment cycle.

At programme level, learning outcomes should specify the complexity of learning expected at each stage of study. At course level, assessment blueprints should map tasks against intended cognitive and competence demands. At examination level, moderation should examine whether questions actually correspond to the stated learning outcomes. At institutional level, quality assurance systems should examine whether graduating students have encountered sufficient opportunities to demonstrate application, analysis, evaluation, creation, practical performance and reflection.

The result would be a movement from assessment moderation as error detection towards assessment quality assurance as evidentiary design.

This is particularly important because assessment exerts a powerful backwash effect on teaching and student learning. Research on MCQs has shown that assessment can influence both what teachers teach and what students learn, meaning that poorly designed assessment can constrain the curriculum even when the formal curriculum advocates higher-order thinking. Consequently, assessment reform may represent one of the most powerful mechanisms through which universities can influence the educational culture of entire programmes.

Towards a Ugandan University Holistic Assessment Architecture

The findings ultimately support the development of a Ugandan University Holistic Assessment Architecture. The proposed architecture should not replace existing assessment instruments but establish principles for combining them according to intended learning outcomes.

This architecture is deliberately developmental rather than rigidly hierarchical. Not every course needs to assess every dimension, and not every examination requires equal representation of all Bloom levels. Rather, the assessment portfolio across a programme should provide sufficient evidence that graduates have progressively developed the capabilities promised by the curriculum.

This represents an important departure from the simplistic interpretation that every examination paper should contain equal percentages of questions at each Bloom level. Cognitive demand should instead be determined by the nature, level and intended outcomes of the programme. A foundational course may appropriately emphasise remembering and understanding, whereas an advanced professional or doctoral course should provide substantially greater opportunities for analysis, evaluation, creation, independent judgement and authentic performance.

Theoretical Contribution of the Study

The principal theoretical contribution of the study is the integration of three traditionally related but analytically distinct ideas: Bloom's cognitive taxonomy, constructive alignment and competence-based assessment.

Bloom's Taxonomy explains cognitive progression. The Cognitive complexity + constructive alignment + authentic performance + reflection = credible evidence of competence.

The contribution is therefore not to modify Bloom's taxonomy itself, but to reposition it within a broader theory of assessment. This distinction is important for scholarly precision. The proposed concepts of *valuing, doing, reflecting and becoming* should not be presented as new levels of Bloom's Taxonomy. They are complementary dimensions that extend the assessment architecture beyond cognition towards holistic graduate development.

The ultimate purpose of university assessment should consequently be neither examination efficiency nor cognitive classification in isolation (Alexander et al., 2026). It should be the generation of credible, diverse and contextually meaningful evidence that students have developed the knowledge, reasoning, practical capabilities, values, reflective capacities and professional dispositions expected of graduates.

In this sense, the most consequential repositioning is philosophical: assessment should move from testing what students remember to establishing what they can meaningfully understand, apply, analyse, evaluate, create, perform, reflect upon and become (Wilfred et al., 2026). Such a transformation would enable Bloom's Taxonomy to function not as a relic of twentieth-century educational measurement, but as a contemporary intellectual instrument for constructing more coherent, authentic and competence-oriented university assessment systems in Uganda.

Conclusion

This paper concludes that Bloom’s Taxonomy remains a theoretically robust and practically relevant foundation for strengthening university assessment, but its greatest value lies in its repositioning from a question-classification tool to a comprehensive architecture for constructive alignment, competence development and authentic evidence of learning. The evidence reviewed demonstrates that the revised taxonomy remembering, understanding, applying, analysing, evaluating and creating provides universities with a coherent language for articulating progressively complex learning outcomes and designing assessment tasks that correspond to those outcomes.

The Ugandan evidence indicates that Bloom’s Taxonomy is already present within the country’s higher education landscape, although the depth, consistency and institutionalisation of its application vary considerably. Makerere University provides particularly strong evidence of formal institutional incorporation, while evidence from other universities demonstrates programme-level, disciplinary and scholarly engagement. This distinction is critical: the presence of Bloom’s Taxonomy in individual courses or scholarly publications should not automatically be interpreted as institution-wide adoption. The findings therefore point to the need for stronger institutional mechanisms through which assessment principles are translated consistently into programme curricula, course outlines, examination blueprints, moderation processes and graduate assessment.

The study further concludes that multiple-choice questions should neither be rejected as inherently inferior nor regarded as sufficient for comprehensive university assessment. Well-designed MCQs can efficiently assess remembering, understanding, application and aspects of analysis, particularly where authentic scenarios and carefully constructed distractors are employed. Nevertheless, MCQs alone cannot adequately establish many forms of complex competence, including sustained argumentation, original creation, practical performance, communication, professional judgement, reflection and authentic problem-solving. Their appropriate position is therefore within a diversified assessment portfolio, rather than as the dominant measure of all forms of learning.

A central conclusion emerging from the analysis is that assessment validity depends fundamentally upon alignment. Intended learning outcomes, teaching and learning activities, assessment tasks and feedback must communicate a coherent educational purpose. Where programmes claim to develop critical thinkers, innovators, researchers, ethical professionals and problem-solvers but predominantly assess factual recall, a structural misalignment exists between curriculum intentions and the evidence used to certify achievement. Bloom’s Taxonomy provides an important mechanism for identifying and correcting this misalignment.

The findings also demonstrate that the transition towards competence-based higher education requires universities to move beyond the narrow measurement of cognitive attainment. University graduates are expected not merely to know, but to understand, apply, analyse, evaluate, create, perform, communicate, collaborate, exercise judgement, reflect and act responsibly within authentic contexts. Consequently, cognitive assessment should be integrated with practical, authentic, reflective and performance-based approaches.

Against this background, the paper proposes a Ugandan University Holistic Assessment Architecture founded on the progression. The process of engagement in the assessment entails higher-order synergy of lecturers to assess students' domains of Knowing → Understanding → Applying → Analysing → Evaluating → Creating → Valuing → Doing → Reflecting → Becoming.

This progression should not be interpreted as a replacement or extension of Bloom's original taxonomy, but as a broader conceptual architecture that places cognitive development within the wider purposes of competence-based and holistic higher education. It provides a basis for integrating MCQs, structured questions, essays, case studies, projects, portfolios, presentations, practical demonstrations, simulations, oral examinations, peer and self-assessment, research tasks and authentic performance activities according to the intended learning outcomes.

The emergence of generative artificial intelligence further strengthens the case for such transformation. Rather than responding to AI primarily by intensifying surveillance or returning to narrowly controlled examinations, universities should develop assessment that requires demonstrable reasoning, contextual application, original decision-making, practical performance, oral defence, reflection and evidence of developmental progression. In this environment, the central purpose of assessment becomes the authentication of meaningful learning rather than merely the production of examinable answers.

Ultimately, the paper argues that the future of university assessment in Uganda should be characterised by cognitive breadth, constructive alignment, assessment diversity, competence authenticity, technological responsibility and holistic human development. Bloom's Taxonomy remains valuable precisely because it provides a foundation upon which such a transformation can be constructed. Its enduring relevance, however, will depend not on how frequently universities mention its six levels, but on how effectively they translate those levels into coherent educational experiences and credible evidence of graduate capability.

The fundamental proposition is therefore that assessment should cease to be understood principally as an endpoint for measuring what students have memorised and should increasingly function as an integrated mechanism for demonstrating what learners understand, can do, can reason about, can create, can justify, can reflect upon and ultimately can contribute to society. Repositioned in this manner, Bloom's Taxonomy can contribute substantially to the development of a more rigorous, authentic, competence-oriented and future-responsive university assessment system in Uganda.

Recommendation

Based on the findings and the paper proposing to Ugandan University Holistic Assessment Architecture, the following recommendations are directed to specific actors within the higher education system. The recommendations are intended to translate the conceptual contribution of Bloom's Taxonomy into practical institutional assessment reform.

1. The National Council for Higher Education (NCHE) should develop national guidance for Bloom-informed and competence-based assessment within higher education. Such guidance should encourage universities to demonstrate constructive alignment among programme learning outcomes, teaching and learning activities, assessment methods and graduate competencies. NCHE should also incorporate assessment diversity, higher-order thinking, authentic performance and responsible use of artificial intelligence into institutional quality-assurance reviews.

2. University Councils and Senates should establish institution-wide assessment frameworks that clearly define the expected cognitive and competency progression from undergraduate certificate and diploma levels through master's and doctoral education. Bloom's Revised Taxonomy should be incorporated where appropriate into assessment policies, without requiring every examination to contain identical proportions of questions at each cognitive level.

3. Academic staff leadership should establish mechanisms for monitoring the alignment between approved programme learning outcomes and actual assessment practices. Examination regulations should require assessment blueprints to demonstrate how major assessments collectively address the intended cognitive, practical and professional competencies of each course and programme.

4. University Faculties and departments should conduct periodic assessment audits to determine whether examination questions and other assessment tasks correspond to the cognitive demands specified in course and programme learning outcomes. Particular attention should be given to preventing situations in which programmes emphasise critical thinking, creativity and problem-solving but predominantly assess factual recall.

5. Lecturers should use Bloom's revised Taxonomy systematically when formulating learning outcomes and designing assessment tasks. MCQs should be retained for areas where they provide valid and efficient evidence, but should be complemented by case studies, structured problems, essays, projects, portfolios, simulations, presentations, practical demonstrations and other authentic tasks where these better capture the intended competence.

6. Examination Boards should strengthen moderation procedures by examining not only the technical correctness of examination questions but also their cognitive demand, validity, reliability, authenticity and alignment with intended learning outcomes. External examiners should be encouraged to comment explicitly on whether assessment provides adequate evidence of the competencies expected at the relevant academic level.

7. University teaching and learning centres should establish continuous professional-development programmes on Bloom's Taxonomy, constructive alignment, authentic assessment, assessment literacy and AI-resilient assessment design. Training should

move beyond memorising Bloom's six categories and provide lecturers with practical experience in constructing and moderating assessment tasks at different cognitive levels.

8. Universities should avoid both extremes of treating MCQs as the ideal assessment instrument or dismissing them as inherently incapable of measuring higher-order thinking. Instead, institutions should develop quality standards for higher-order MCQs, including authentic scenarios, interpretation of evidence, application of principles, diagnosis of problems and reasoned selection among plausible alternatives. MCQs should form one component of a broader assessment process.

9. Programme teams should progressively increase opportunities for students to demonstrate what they can do with what they know. Depending on the discipline, this may include laboratory demonstrations, clinical practice, teaching practice, fieldwork, simulations, design projects, professional cases, entrepreneurial projects, research proposals and community-based problem-solving. Assessment should therefore capture both cognitive achievement and demonstrated competence.

10. Universities should incorporate structured opportunities for students to explain how they arrived at a conclusion, why they selected a particular solution and what they learned from the process. Reflective journals, learning portfolios, oral defences and self-assessment can complement conventional examinations and provide evidence of metacognition and independent learning.

11. Universities should revise assessment policies to distinguish between appropriate, declared use of generative AI and unacceptable substitution of AI for student learning. Rather than relying exclusively on assessment tasks that can easily be generated by AI, lecturers should employ contextualised tasks, oral defence, practical demonstrations, progressive project submissions, reflection and locally situated problem-solving. AI literacy should become part of assessment literacy rather than being treated solely as an examination-security issue.

12. Every academic programme should maintain an assessment map showing how major learning outcomes progressively develop and are assessed across the years of study. The map should demonstrate progression from foundational knowledge towards application, analysis, evaluation, creation and authentic professional performance. This would help prevent unnecessary repetition of low-level assessment and identify competencies that are insufficiently assessed.

13. Assessment should not end with grading. Universities should strengthen timely, constructive and developmental feedback that enables learners to understand their strengths, identify learning gaps and improve subsequent performance. Feedback should increasingly address reasoning, application, problem-solving, creativity and professional judgement, rather than merely indicating whether an answer is correct.

14. Universities should support systematic research into the effectiveness of different assessment approaches within Ugandan higher education. Future studies should investigate the relationship between Bloom-aligned assessment, student achievement, higher-order thinking, employability, professional competence and graduate outcomes. Institutions should also document their assessment reforms so that claims of institutional adoption can be distinguished from isolated classroom applications.

15. Ugandan universities should move from an examination-centred culture to an evidence-of-learning culture. The objective should not be to increase the number of assessments but to improve the quality and diversity of evidence used to establish learning. A coherent assessment system should therefore combine selected-response assessment, constructed-response assessment, authentic performance, practical demonstration, research, reflection and professional application according to the learning outcomes.

16. The overarching recommendation is that Ugandan universities should adopt Bloom's Taxonomy as one component of a broader institutional assessment architecture rather than as a stand-alone examination formula. The architecture should integrate multiple questions testing different values of lifelong learning and holistic human development during this era of competence-based curriculum.

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