THEME III

EDUCATIONAL REFORMS AND SUSTAINABLE DEVELOPMENT: THE NYERERE'S LEGACY

Using Bloom's Taxonomy to Evaluate Cognitive Levels in Assessments of Language Programmes: A Case of Mwalimu Nyerere Memorial Academy, Tanzania

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Abstract
The current principles of assessment emphasize examinations designed with a competency-based approach, which focuses on the learners' ability to apply specific skills in different contexts. Thus, examination setters are recommended to construct questions based on the table of specifications, which displays a number of questions varying from various levels of cognitive function. These questions are expected to engage learners in deeper and analytical thinking processes. One way to do this is to construct the questions within the agreed balance among the six levels of the cognitive domain. This study examines the degree to which the semester examination questions from modules in the Higher Learning institutions reflect the balanced skills needed, taking MNMA as a case. The study used a qualitative approach and a case study design. Eighteen (18) semester examination modules of Higher Diploma and Bachelor's Degree in Kiswahili and English Language candidates were purposively sampled for document review. A total of 747 questions were analysed contently grounded on the cognitive domains of the revised Bloom Taxonomy by categorizing them in Higher Order of Cognitive Questions (HOCQs), Intermediate Order of Cognitive Questions (IOCQs), and Lower Order of Cognitive Questions (LOCQs). The findings revealed a remarkable predominance of LOCQs (68%) over the IOCQs (28.8%) and HOCQs (4%). These findings imply a gap between educational reforms (e.g., Competency-Based Approach) and assessment practice. Moreover, this study recommends that Higher Learning Institutions reflect on the examination setting standards for practical and functional assessment.

Keywords: Bloom's taxonomy, Cognitive levels, Higher learning institutions, Assessment, Order of thinking

1. Introduction

Assessment is an integral part of instruction, as it determines whether or not the goals of education are being met. Assessment affects decisions about grades, placement, advancement, instructional needs, curriculum, and sometimes funding (Ahmad, 2017). The term assessment refers to all those activities undertaken by teachers and their students in assessing themselves to provide information to be used as feedback to modify teaching and learning activities (Irira, 2014). One of the most popular ways of academic assessment is through examinations. In teaching and learning, examinations or tests are the most crucial aspect for teachers or instructors to check on the achievements of the learning objectives. Roediger, Putnam, and Smith (2011) assert that testing identifies knowledge gaps, causes students to learn more for the next learning episode, improves knowledge transfer to new contexts, improves metacognitive monitoring, and provides instructor feedback. Quality examinations have a high degree of performance in which students demonstrate their capacity to understand the subject matter and transfer what has been learnt to real-life situations at a particular level of study (Irira, 2014).

Examinations can be written exercises, oral questions, or practical tasks set to test a candidate's gained knowledge, skills, and values; hence, they are essential tools for evaluating students' learning outcomes and require proper planning to meet high standards (Aminu, 2006). This implies that an examination measures a candidate's knowledge, skills and/or aptitude (Hornby, 2000). Examinations have therefore emerged as one of the major established yardsticks and the most practical way of assessment.

Today, we know learning requires that the learner engage in problem-solving to build mental models actively. Knowledge is attained by receiving information and interpreting the data, and relating it to the learner's knowledge base. Therefore, the learners' ability to organize, structure, and use information in context to solve complex problems is essential in assessment. "If assessment is to be a positive source in education, it must be appropriately implemented (Ahmad & Algarh, 2017).

In higher education, assessment is essential for determining student progress and directing teaching methods. Research shows that assessments frequently focus on Lower-Order Cognitive abilities like remembering and understanding instead of encouraging Higher-Order Thinking abilities necessary for critical and autonomous learning. Boud and Falchikov (2007) stress the assessment procedures that promote autonomy and critical thinking, because traditional assessment methods may prevent deep learning. The essential analytical and

evaluative skills at the tertiary level are mostly ignored in university examinations (Stanny, Gonzalez, and McGowan, 2015). Studies by Krathwohl (2002) show that assessments that align with all levels of Bloom's Taxonomy—especially the higher levels—produce more significant academic growth and student involvement. Biggs and Tang (2011) support these viewpoints by arguing for constructive alignment, in which assessment tasks are modelled after real-world applications and combined with instructional tactics to achieve desired results. These results demonstrate the necessity of reconsidering assessment procedures in higher education to ensure they meet the cognitive requirements of learning in the twenty-first century. This is possible through the appropriate use of the Bloom Taxonomy.

The paramount guiding principle in administering any classroom test is that the examinee should be given a fair chance to demonstrate his/her achievement of the intended learning outcomes (Round, 2010). These learning outcomes describe the measurable skills, abilities, knowledge, or values that students should be able to demonstrate as a result of completing a course or educational objectives. In the late 1940s, Bloom and other educators worked on a way to classify educational goals and objectives, which resulted in three learning categories**:** cognitive domain (deals with knowledge- verbal or visual intellectual capabilities), affective domain (deals with attitude- feelings, values, beliefs), and psychomotor domain (deals with skills- physical skill capabilities).

The taxonomy can be helpful as one develops assessments by matching course learning objectives at any given level of mastery. When teaching lower-division introductory courses, one might measure mastery of objectives at the lower levels. When teaching more advanced, upper-division courses, one would most likely assess students' abilities at the higher levels of the taxonomy. Taking the cognitive domain, for instance, the instructional objectives are more effective since they include specific verbs which can tell students what they are expected to do, e.g., list, explain, demonstrate, compare, determine, or construct. In 2001, a former student of Bloom and others published a new version of the taxonomy to fit better educational practices of the 21st century (cf. Krathwohl, 2002). In the revised edition, the six cognitive domain categories were changed from nouns to verbs, because verbs describe actions, and thinking is an active process. In the revised edition, the fifth and sixth level substituted their positions. Figure 1 represents the revised cognitive domain of Bloom's taxonomy.

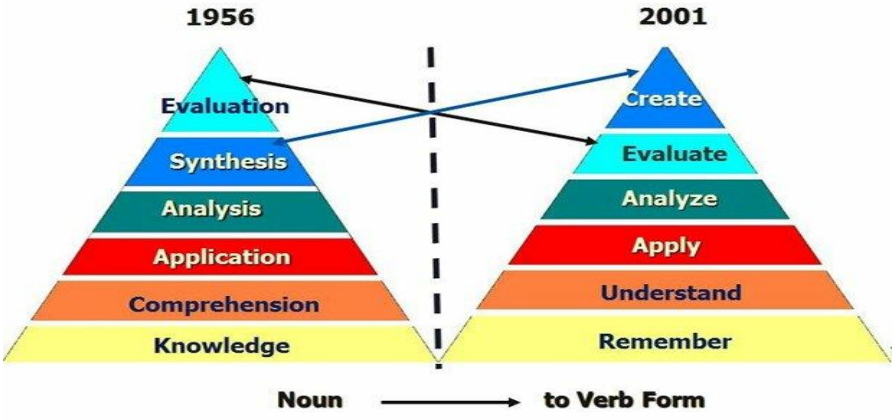

Figure 1: Revised cognitive domain of the Bloom's taxonomy adapted from Krathwohl (2002).

Bloom's taxonomy can be applied in the following areas (Giesen, 2014): write and revise learning objectives, plan curriculum, identify simple to most difficult skills, effectively align objectives to assessment techniques and standards, incorporate knowledge to be learned, and facilitate questioning.

Bloom's Taxonomy makes teachers think about the type of questions before constructing them. Bloom's taxonomy, through its cognitive domain, allows educators to bring out a balance and consistency while setting questions. In setting questions, cognitive level is divided into three groups: Lower Order Cognitive Questions (LOCQ) – covering questions for testing the remembering and understanding of the concepts by the students; Intermediate Order Cognitive Questions (IOCQ) - covering questions that test the applying and analyzing skills of students; and Higher Order Cognitive Questions (HOCQ), to test the evaluating and creating abilities of the students concerning their knowledge (Sivaraman & Krishna, 2015). The following **Table 1** is illustrative.

Students should feel that the question paper is fair and meaningful, and the assessment data reflecting the students' achievement should support this fact. Applying the cognitive level of Bloom's taxonomy is one of the instruments used to achieve this objective. Thus, writing high-quality examination questions that include both HLQs and LLQs plays a crucial role in helping students achieve the target learning outcomes and evaluate their level of proficiency in a specific course (Wachiuri et al., 2017). The HLQs help students deepen their learning materials and promote critical thinking and creativity. In this vein, Song (2019) claimed there is a positive relationship between teachers' questions and students' critical thinking. In the same line of thought, Wagner

(2011) underscored that high-quality education should infuse the seven survival skills with higher-level thinking. Daggett (2016) echoed Wagner's views and indicated that, beyond knowledge and remote learning, schools must emphasize the higher-order abilities to develop critical thinking through higher-order materials.

Table 1: Reviewed Cognitive levels of the Bloom Taxonomy

SN	Cognitive Levels	Questions as Per Level	Grouped Cognitive Questions Level	% as per examination
1	Remembering	i. What is educational psychology? ii. Taja mhusika mkuu wa Tamthiliya ya Kusadikika.	LOCQs	20–30
2	Understanding	i. Read the following story and retell the story in your own words in two paragraphs. ii. Explain the main tenet of Feminist Theory.		
3	Applying	i. Which approaches would you use to teach receptive skills to EFL learners? ii. How would you use phonological rules to explain the characteristics of a phoneme?	IOCQs	40–50
4	Analysing	i. Ascertain five factors to consider when selecting authentic materials for KSL teaching. ii. How are the six levels of the cognitive domain related to the competence-based approach		
5	Evaluating	i. What is your opinion of the role given to any female character in the play you have read? ii. Fasihi huakisi maisha halisi. Thibitisha kauli hii.	HOCQs	30–40
6	Creating	i. How would you propose alternative reading, teaching, and learning strategies for learners with low vision in an inclusive school?		

Source: Adapted from Sivaraman and Krishna (2015)

This study seeks to examine the degree to which the questions of Language modules of the higher learning institutions' semester examinations adhere to the six levels of the cognitive domain, taking MNMA as a case. First, assessing how course instructors construct their questions within the agreed balance

among the six levels is essential. In a step further, it is critical to analyse whether the examination questions of the higher learning institutions in the semester Language courses are based on the three levels: higher, intermediate, and lower-order thinking levels.

2. Theory Underpins the Study

The Constructivist Learning Theory guided the present study. This theory is rooted in the works of educational theorists such as Jean Piaget and Lev Vygotsky, who posit that learners actively construct their understanding and knowledge of the world through experiences and reflections. This theory emphasizes the importance of active engagement, problem-solving, and critical thinking in learning. This theory posits that learners construct knowledge through experiences and reflections. Bloom's Taxonomy can create assessments that encourage deeper learning and understanding, aligned with the constructivist approach. Using Bloom's Taxonomy within the Constructivist Framework, educators can develop examinations that assess students' knowledge and promote meaningful learning and the development of critical thinking skills via active learning, scaffolding, deep understanding, and reflective thinking.

3. Methods and Procedures

In this study, we employed the qualitative case study design by using the semester examinations of the students taking Higher Diploma of Education in Kiswahili and English Language, and Bachelor's Degree of Education in Kiswahili and English Language (HD.EKE and BD.EKE) at the Mwalimu Nyerere Memorial Academy (MNMA) as the study materials. We selected these examinations purposely because they are prepared by faculty members who are experts in education studies. Only second-semester examinations of the academic year 2023/2024 were chosen because they were the latest examinations during data collection. Having sampled the examinations, we used the document review method to identify the nature of the questions used. Document review involves relevant paperwork and artefacts, such as textbooks or newspaper articles, where, in this study, paperwork was involved (Creswell and Creswell, 2018). Then, the identified questions were analysed in detail.

The content analysis method was used to identify, organize, and analyse occurrences of specific messages included in texts. With the content analysis approach, the analysis unit is the smallest item on which researchers focus. It is supposed to bear minimal information responding to one or a series of research questions (Erlingsson & Brysiewicz, 2017; Yanovitzky & Weber, 2020).

According to Titscher et al. (2012), the units of analysis are the smallest components of texts in which the occurrence and the characterization of variables (properties, categories) are examined. An analysis unit can be a single word, a structure, a syntactic construction, or a theme. In the framework of this study, the analysis units were the action verbs and their complementing words used in association with one of the six revised Bloom's taxonomy cognitive levels.

We started by identifying, cataloguing, and analyzing question stems based on every cognitive level and action verb related to the lower, intermediate, or higher thinking order of the reviewed cognitive levels of Bloom's taxonomy to address the study issue. We created a checklist based on the six cognitive domains to achieve this. The checklist contained a table with twelve columns that listed the action verbs used in each examination portion for each of the 18 modules of the courses administered in the second semester for the academic year 2022/2024, along with the six cognitive domains and higher, intermediate, and lower cognitive levels. There were two sections on every examination paper: Section A with objective and short answer questions, and Section B with essay-type questions, which we utilized to identify and analyse the questions.

Secondly, we integrated the checklist with an explanation table that included definitions, examples, illustrative action verbs, cognitive levels, and six cognitive domains. For every level, we classified the following action verbs from the mental part: remembering, understanding, applying, analyzing, evaluating, and creating.

Third, we identified and displayed data in tables following the coding of the examination questions, following the six cognitive domains. We offered frequencies for all three types of questions – objectives, short answers, and essays, the 18 modules' cumulative total of questions in each of the six cognitive domains, and corresponding percentages for the 18 module examinations. Microsoft Excel was used to carry out those calculations and assess cognitive abilities.

4. Findings

4.1 Assessing the construction of the semester examination questions within the six levels of Bloom's Taxonomy

In this section, data on the frequencies and percentages of the Lower Order Cognitive Questions (LOCQs), Intermediate Order Cognitive Questions (IOCQs), and Higher Order Cognitive Questions (HOCQs) are presented in Tables 2, 3,

and 4. Each question section is presented in a specific table, making a group of objective questions, short answer questions, and essay-type questions. These tables were used to determine frequencies and percentages of the six levels of cognitive domains employed in the semester examination questions, fast and accurately. Descriptions of the frequencies and the percentages of the question types are given after each table below, followed by the sample questions from the examination papers reviewed.

Table 2: Frequencies and Percentages of the Six Levels of the Cognitive Domain in the Revised Bloom's Taxonomy in the Objective Questions

Level of QO	**Cognitive domain levels**	**Frequencies for the modules**																		**Total**	**Percentage**
T		**MODULES**																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
LOCQs	Remembering	9	9	8	20	15	11	19	5	13	0	19	20	20	13	20	8	9	8	**355**	**67**
	Understanding	16	1	2	9	5	9	1	5	2	25	11	10	7	6	12	2	4	2		
IOCQs	Applying	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**174**	**33**
	Analysing	11	0	0	10	10	10	10	10	5	10	10	15	15	10	15	7	17	5		
HOCQs	Evaluating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
	Creating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total		**40**	**10**	**10**	**39**	**30**	**30**	**30**	**20**	**20**	**35**	**40**	**45**	**42**	**29**	**47**	**17**	**30**	**15**	**529**	**100**

In assessing whether the construction of questions is within the agreed balance among the Six Levels of Bloom's Taxonomy, Table 2 illustrates that most of the objective questions in the semester examinations relied on the lower order of cognitive questions (remembering and understanding), which makes a total percent of 67. The questions related to the intermediate order of cognitive questions (applying and analyzing) make up 33 percent, while there is no single percent of the questions related to higher order cognitive questions (evaluating and creating). Sample questions from the objective questions section are presented below:

i. Identify the kind of supervision that considers the diverse needs of teachers in different situations in schools.
    A. Differentiated supervision
    B. Creative supervision
    C. Collective supervision
    D. Clinical supervision

ii. Write true for correct statements and false for incorrect statements in the answer booklet provided.
    a. The use of visual sense is known as audio-visual resources.
    b. The assessment, using essay questions, covers small topics.
    c. Tests help in measuring behavior.

Table 3: Frequencies and Percentages of the six Levels of the Cognitive Domain in the Revised Bloom's Taxonomy in the Short Answer Questions

Level of QO	**Cognitive domain levels**	**Frequencies for the modules**																	**Total**	**Percentage**
		MODULES																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
LOCQs	Remembering	0	25	5	0	8	4	9	5	1	0	0	0	0	0	0	7	0	2	**106**	**82**
	Understanding	4	1	0	2	0	6	1	5	5	0	2	1	5	2	3	0	2	1		
IOCQs	Applying	1	6	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	**20**	**16**
	Analysing	1	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0		
HOCQs	Evaluating	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	**3**	**2**
	Creating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total		**7**	**32**	**11**	**2**	**8**	**10**	**10**	**15**	**6**	**0**	**2**	**2**	**5**	**2**	**3**	**7**	**2**	**5**	**129**	**100**

As displayed in Table 3, most of the semester examinations' short answer questions relied on the LOCQs (remembering and understanding), which makes a total percent of 82. The questions related to IOCQs (applying and analyzing) make up a total of 16 percent, while only 2 percent are covered by the questions about HOCQs (evaluating and creating). Sample questions from the short answer questions section are presented below:

i. Briefly the following terms as used in History facilitation methods
    a. Summative evaluation
    b. Formative evaluation
ii. Eleza kwa ufui makundi matano ya zana za asili
        a. ni muasisi wa Uandishi alieandika riwaya ya *Kichwamaji.*
        b. ni utenzi unaoakisi maudhui tunayokuta katika tenzi nyingi za kiafrika na hata za kiulimwengu.

Table 4 illustrates the frequencies and percentages of the six levels of the cognitive domain in the revised Bloom's Taxonomy in the essay questions section of the semester examinations. This table illustrates that most essay-type questions of the semester examinations rely on the LOCQs (remembering and understanding) and the HOCQs (evaluating and creating), which comprise 49 percent and 36 percent, respectively. There are very few questions related to IOCQs (applying and analyzing), comprising 15 percent. Sample questions from the essay-type questions section are presented below:

i. Critique Maslow's theory of motivation regarding its applicability in education.
ii. Is it necessary for upcoming linguists to continue studying the concept of stress in English? Write four points supported by examples.
iii. Construct five correct sentences, and each draw a P marker using the Ps theory. It indicates verb transitivity and lists the terminal nodes found in that sentence.
iv. With specific examples, elaborate on the types of family planning methods approved in Tanzania.
v. Ushairi hausemi uongo, haumdanganyi mtu, bali hutumia matendo ya binadamu kuifunza jamii husika. Fafanua kauli hiyo kwa hoja nne ukionesha mifano kwa kutumia Diwani ya Mawio (Utouh).

Table 4: Frequencies and Percentages of the six Levels of the Cognitive Domain in the Revised Bloom's Taxonomy in the Essay Questions

Level of QO	**Cognitive domain levels**	**Frequencies for the Modules**																	**Total**	**Percentage**
		MODULES																		
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	
LOCQs	Remembering	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**34**	**49**
	Understanding	2	2	4	2	1	2	3	3	1	3	0	2	1	4	1	1	1	1		
IOCQs	Applying	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	**10**	**15**
	Analysing	0	1	0	0	0	2	1	0	0	0	0	0	1	0	1	0	0	1		
HOCQs	Evaluating	1	0	0	2	3	0	0	1	3	0	2	1	2	0	2	3	2	2	**25**	**36**
	Creating	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0		
Total		**4**	**3**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**2**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**69**	**100**

4.2 Examining the adherence of the language modules' semester examination questions to the six levels of the cognitive domain of Bloom's Taxonomy

Having assessed the construction of the semester examination questions within the six levels of cognitive domain, 747 questions were scrutinized to investigate the degree to which the questions in the semester examinations addressed the Higher, Intermediate, and Lower Cognitive Levels of the revised Bloom Taxonomy. Table 5 summarizes the overall frequencies and percentages of the six levels of the cognitive domain in the revised Bloom's taxonomy in the exam questions for all sections.

Table 5: Overall frequencies and percentages of the six levels of the cognitive domain in the revised Bloom's taxonomy in the exam questions for all sections

Level of QO	**Cognitive domain levels**	**Objective questions**	**Short answers questions**	**Essay type questions**	**Total number of questions of each cognitive domain level**	**Total % of questions of each cognitive domain level**	**Total number of each level of QO**	**Total % of each level of QO**
LOCQs	Remembering	226	66	0	292	39.1	**515**	**69**
	Understanding	129	40	54	223	29.8		
IOCQs	Applying	4	13	3	20	2.7	**204**	**27**
	Analysing	170	7	7	184	24.6		
HOCQs	Evaluating	0	3	24	27	3.7	**28**	**4**
	Creating	0	0	1	1	0.3		
Total		**529**	**129**	**89**	**747**	**100**	**747**	**100**

The questions reviewed in all selected semester examinations illustrate that, out of 747 questions, there are 515(69%) of LOCQs (remembering and understanding), 204(27%), and 29(4%) of IOCQs (applying and analyzing) and HOCQs (evaluating and creating), respectively. Similarly, within the LOCQs, remembering and understanding cover 39.1% and 29.8% respectively, with great variation in the IOCQs, covering 24.6% while applying covering 2.7% only. This unbalancing weight along these cognitive levels is remarkably seen

in the HOCQs, where evaluating and creating cover 3.7% and 0.3% respectively. In short, Table 5 shows that the questions in the reviewed module semester examinations have a higher predominance of LOCQs than the IOCQs and HOCQs.

5. Discussion and Conclusion

This study sought to examine the degree to which the semester examination questions from modules in the Higher Learning institutions reflect the balanced cognitive levels of Bloom's Taxonomy, taking MNMA as a case. The questions reviewed in the sections of all selected modules have shown a dominance of HOCQs, which cover 69% compared to both IOCQs and HOCQs, which cover only 31%. These findings imply that most course instructors set the semester examination questions with an unbalanced weight of the required cognitive levels by relying on the LOCQs (remembering and understanding. Research suggests that writing high-quality examinations that include both HOCQs and LOCQs plays a crucial role in helping students achieve the target learning outcomes and evaluate their level of proficiency in a specific course (Wachiuri et al., 2017; Shabatura, 2022) as each level is significant to given assessment purposes. While research suggests the HOCQs help students deepen the learning materials and promote their critical thinking mindset and creativity (Daggett, 2016; Song, 2019), the modules of the reviewed examinations have not included satisfying IOCQs and HOCQs.

Looking at question coverage at individual cognitive levels, there are still remarkable variations in the number of questions covered. For example, the reviewed questions of the selected modules show a dominance of the LOCQs (remembering and understanding), covering 39.1% and 29.8%, respectively, making a total of 69% out of 100% in all questions. The implication is that course instructors set the questions to test how learners can recall information and comprehend concepts, a foundation of IOCQs and HOCQs. These results are the same as those of Karatch School conducted by Chandio, Pandhiani, and Iqbal (2016), where results showed that the domain of remembering was more focused, which inculcates the trend of rote-learning and memorization among students rather than knowledge application and critical thinking. According to them, one reason for the teachers' focusing on low level thinking domains could be that the paper setters are not trained and do not incorporate modern and updated assessment approaches while setting papers.

Despite the IOCQs having a very low percentage of questions covered, the questions it applies cover only 2.7% of all the questions, with analysis covering

24%. Moreover, in the HOCQs, evaluating and creating cover the lowest percent (4%), where evaluating takes 3.7% and making 0.3%. Again, comparing these percentages in IOCQs and HOCQs, applying and creating are the individual cognitive levels with the lowest rate, 2.7% and 0.3% percent respectively. This implies that course instructors of the modules selected do not consider testing how the candidates will apply the knowledge they receive to create new or original works in different contexts. These findings can be compared to those of Gezerm et al. (2014), who indicated that most of the papers' questions about Social studies college students were dominated by the lower level of learning (remembering and understanding) while ignoring the IOCQs and HOCQs. Thus, the problem is prevalent in other higher learning institutions.

Greater cognitive questions require students to process, manipulate, and evaluate new information, a skill essential for success in the 21st Century. Pendergast and Swain (2013) emphasized the superiority of HOTS over LOTS. Conversely, lower-order thinking is limited to basic recall or recognition of previously learned material, such as repeating and listing already memorized information. The present study has revealed serious problems in the questions related to applying and creating, with only 2.7% and 0.3% respectively. At the same time, research suggests that critical thinking, creativity, problem-solving, and communication competencies would enable students to become lifelong learners who can adapt to the fast-changing world and the uncertain future (Ngendahayo & Askell–Williams, 2016).

Song (2019) claimed there is a positive relationship between teachers' questions and students' critical thinking. Assessing higher learning students while ignoring higher cognitive questions means choosing not to care about their ability to think and use knowledge to solve problems and create new solutions. However, research shows that there has been a lack of contextualization of CBC implementation, a limited understanding of CBC objectives, and its implementation with fidelity (Ruth & Ramadas, 2019).

The present study's findings concur with several recent studies conducted in primary, secondary, and higher learning institutions. Muhayimana, Kwizera, and Nyirahabimana (2022) analysed the reflection of the six levels of the cognitive domain in the Rwandan Primary English National exams. The findings revealed a remarkable predominance of the lower-order thinking skills (LOTS) (98.79%) over the higher-order thinking skills (HOTS) exam questions (1.21%). Moreover, Hahenimana, Ntawiha, Tabaro, and Buhigiro (2023)

conducted the same study in the secondary schools' National exams. It was also realized that most assessments are limited to the lower levels of thinking, and only a few questions were set to assess higher levels. Saha (2024) conducted a study on analyzing existing exam questions and designing test items according to Bloom's Taxonomy for higher learning institutions in Telangana. The findings revealed that most questions in the papers predominantly assessed lower-order thinking skills, limiting the evaluation of higher-order thinking skills. The written examination extensively assessed understanding and remembering components of the cognitive domain.

The present study examined how course instructors use the six cognitive levels of the Bloom's Taxonomy in preparation for higher learning using MNMA Language students' programs semester examinations as a case. The findings revealed that questions were dominated by the lower cognitive question levels of remembering and understanding, with low coverage of the intermediate and higher orders. Higher learning exams should include all six levels of the cognitive domain—remembering, understanding, applying, analyzing, evaluating, and creating—to ensure a comprehensive assessment of students' learning. By incorporating these levels, the exam can assess students' recall of information and their ability to comprehend concepts, apply knowledge to real-world scenarios, analyse relationships, critically evaluate evidence, and create new ideas or solutions. This holistic approach encourages deeper learning and fosters critical thinking skills essential for academic success and professional development. Additionally, it accommodates diverse learning styles and prepares students for complex problem-solving in their future careers.

6. Recommendations

6.1 Recommendation for further study

The present study was limited to the exam papers of the students pursuing HD and BD. Education in Kiswahili and English Language only, one can research in other educational degree programs like BD. EDU in History and Kiswahili, Geography, etc. These results from the degree program are closely related to the course instructors who are familiar with the principles of measurement and evaluation. It might be worth conducting a study involving examinations from non-educational programs, yielding different results. The study was limited to semester exams; one can research coursework, Teaching and learning materials used, and teaching and learning materials used by instructors. The present study was conducted at MNMA only; thus, a comprehensive research needs to be done to cover other Higher Learning Institutions based on a representative sample to get a general picture.

6.2 Recommendations for action

The present study's findings are evidence that course instructors need special training on how to set examinations. There is a need to review examination settings and moderation procedures. Specific course departments rethink being in charge of examination settings.

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