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Appraisal of May/June West African Senior School Certificate Examination Questions in Business Management

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Abstract

Assessment is a key component of teaching and learning. Poorly constructed questions might affect students' performance and distort examination results. The main purpose of the study was to evaluate May/June West African Senior School Certificate Examination (WASSCE) questions in Business Management. The study was guided by the cognitive level of Bloom's Taxonomy. The data source consisted of multiple-choice questions (MCQs) and essay test items drawn from May/June WASSCE questions in Business Management conducted by the West African Examinations Council (WAEC) for a period of eight (8) years (2011-2018). Descriptive-content analysis was used to classify the examination questions based on the cognitive level of Bloom's taxonomy. The study found that most of the examination questions (MCQs) were standard (followed the principles of constructing multiple-choice item). However, few of the MCQs had item writing flaws (IWFs) such as negative stem, options not having equal length and options not arrange in alphabetical and chronological order. Also, most of the examination questions highly measured the lower-order cognitive processing of the students. Only few questions measured higher-order cognitive levels of the students. The study concluded that the assessment principles in constructing multiple-choice items and profile dimensions are not strictly adhered to in crafting May/June WASSCE questions in Business Management. The dominance questions in the domain of lower-order cognitive skills could possibly affect instructional intercourse, predominantly, where teachers and students largely depend on such questions for practice and assessments. The study recommended that WAEC should ensure that examiners follow assessment principles in constructing multiple-choice items in order to avoid item writing flaws (IWFs). They should ensure that examination questions are carefully designed taking into consideration the profile dimensions of the syllabus in order to develop students' higher-order cognitive processing skills.

Keywords: Assessment, Business Management, Bloom's Taxonomy, Item Writing Flaw, WAEC, WASSCE

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Introduction

Assessment is an integral part of instructional intercourse. The foremost objective of assessment is to identify the degree and magnitude to which intended learning outcomes has been accomplished. There are several assessment tools (tests, observation, interview, rubric etc) that could be used to measured students' learning outcomes. Any of these assessment tools should employ more intellectually challenging tasks which require students to exhibit higher order thinking skills and not basically tests of memory that require lower-order thinking skills of students. This suggests that the assessment tool(s) to be used to measure the intended learning outcome, should be authentic, relevant and approximate skills that students will need in their future workplace in order to help solve real life problems (Upahi, Issa & Oyelekan, 2015). Considering the functions of assessment in educational sector, it is continually imperative that assessment tests are reliable and valid (Palmer & Devitt, 2007). Consequently, both test developers and users should make conscious effort to improve the validity and the reliability of the test in order to get objective information that approximate the individual's true characteristic, which the test developer seeks to estimate.

In Ghana, students' assessment in Business Management at the secondary school level is both internal and external based on both formative and summative assessments. The summative assessment (The West African Senior School Certificate Examination [WASSCE]) is carried out by West African Examinations Council (WAEC) at the end of senior school education that spans 3-years period of learning. Its main thrust is to judge what the students have achieved and also serve as a proxy measure to judge the quality of our education system. The final exam in Business Management by WAEC is expected to be high stake examination because, the current reforms in Business Education emphasise a purposeful effort to enhance students' higher order cognitive skills (HOCS) of question asking, among other skills. The construction and organisation of the examination questions are crafted by the Examination Boards of the member countries (Nigeria, Liberia, Ghana, Sierra Leone and Gambia), on the basis of the objectives and contents of the national curriculum; teaching and examination syllabi operational in those countries (Ministry of Education [MoE], 2010).

For Business Management, there are two papers, Paper 1 and Paper 2; both of which constituted a composite paper and was taken at a sitting. Paper 1 consist of fifty (50) compulsory multiple-choice objective questions which covered the entire syllabus and carries 30 marks. It lasts 1 hour (MoE, 2010). Paper 2 also consists of a compulsory case study question and seven other essay questions, out of which candidates are expected to answer any three. The case study ranged between 200 and 250 words and carries 25 marks, while the other questions carries equal marks of 15 each. The paper, therefore, carries a total of 70 marks. It lasts for 2 hours (MoE, 2010). The WASSCE is a qualitative and reliable examination in West Africa that has a strong influence on learning, teaching and assessment in Business Management.

However, preliminary observation and analysis of WAEC questions in Business Management indicates that some of the items contain flaws or errors. Furthermore, we often hear students complain about their exams. The students typically complain about the basis for examination. Some claimed that the exams is too hard and others also complained about unclear or ambiguous questions. In addition, interrogating students' performance in Business Management, it appears students' blame it on examination difficulty. This presupposes that WAEC Business Management test items are seen by

students to be very difficult, perhaps above their thinking levels.

Several studies have been conducted to examine item writing flaws (IWFs) in multiple-choice questions (MCQs) and the cognitive processing skills required in examination questions. Most of these studies are in the medical field (nursing education) (Downing, 2005; Tarrant, et al., 2006; Pais et al., 2016; Kenneth & Mari-Wells, 2017; Costello et al., 2018), the sciences education, particularly Chemistry, Physics and Biology (Tikkanen & Aksela, 2012; Ijeoma et al., 2013; Okanlawon & Adeot, 2014; Upahi et al., 2015; Upahi et al., 2016). Some of the studies also focused on other subjects like English language (Alfaki, 2014; Assaly & Smadi, 2015; Ebadi & Mozafari, 2016; Kasim & Zulfikar, 2017; Solihati & Hikmat, 2018), Mathematics (Boyd, 2008; Cobbinah, 2016; Cobbinah et al., 2017), Social Studies (Rawadieh, 1998; Tarman & Kuran, 2015) and Accounting education (Davidson & Baldwin, 2005). These studies are important to the current study, however, due to geographical, socio-economic, social perspectives and educational policies differences, the findings from these studies cannot be applied or generalised in Ghanaian context.

In Ghana, most of the studies on assessment focus on teachers' construction skills and adherence to testing principles (Amedahe, 1989; Cobbinah, 2016; Quansah & Amoako, 2018; Quansah, Amoako & Ankomah, 2019). It appears that it is only Cobbinah et al. (2017) who examined the level of thinking required in WASSCE core mathematics. To the best of the researcher knowledge, it appears that no study has been conducted to examine WASSCE May/June examinations questions in Business management conducted by WAEC. This study, therefore, appraise May/June WASSCE questions in Business management conducted by WAEC for the period of eight years (2011-2018) using Bloom's taxonomy. This study was guided by the following research questions:

1. What are the item-writing flaws (IWFs) in May/June WASSCE MCQs in Business Management (2011-2018)?
2. What are the cognitive processing skills required in May/June WASSCE MCQs questions in Business Management (2011-2018)?

Literature Review

Theoretical Framework

This study is rooted in the conceptual framework of cognitive domain provided by Bloom (1956). Bloom's taxonomy has been widely accepted as a guideline in designing reasonable examination questions belonging to various cognitive levels. There are six major categories of cognitive processes, which are listed in order below, starting from the simplest to the most complex (see Figure 1). The first three down levels (knowledge, comprehension and application) are considered as lower-order skills whereas the last three employ higher-order thinking skills (Hopper, 2009; Orey, 2010).

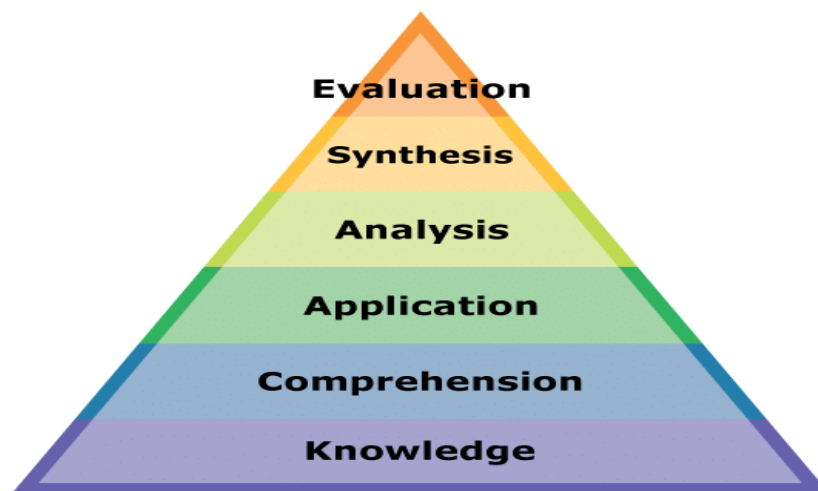


Figure 1. Bloom's taxonomy-cognitive processing skills

1. *Knowledge:* Business management test questions focus on identification and recall of information.
2. *Comprehension:* Business management test questions focus on use of facts, rules and principles.
3. *Application:* Business management test questions focus on applying facts or principles.
4. *Analysis:* Business management test questions focus on separation of a whole into component parts.
5. *Synthesis:* Business management test questions focus on combining ideas to form a new whole.
6. *Evaluation:* Business management test questions focus on developing opinions, judgments or decisions.

Empirical Review

This section review empirical studies on item writing flaws (IWFs) and cognitive process skills required in the examination questions.

Item-Writing Flaws (IWFs)

Item-writing flaws (IWFs) arises when we swerve from the accepted principles or guidelines in constructing MCQs. Subsequently, this flaws items (MCQs) might affect students' performance in such a way that it might become difficult or easier for the student to answer it. A plethora of studies have been conducted to investigate item writing flaws (IWFs) in examination questions in different disciplines. Conversely, these studies have inconclusive findings. For example, Masters et al. (2001) examined 2,913 textbook test bank questions and found that 76.7% violated test writing guidelines. In a medical basic science achievement test, Downing (2002) found that 11 out of 33 questions (33%) were flawed. In assessing the quality of four examinations given in a U.S. medical school, Downing (2005) found that 46% of the MCQs contained item-writing flaws. In another study, test-writing errors by faculty members in nursing education were found to occur in 46.2% of the 2,270 MCQs collected from tests and

examinations over a five-year period from 2001 to 2005 (Tarrant et al., 2006). The authors also observed that MCQs constructed at lower cognitive levels had more item writing flaws. Negative stems, unfocused stems, and “window dressing” (i.e., excessive verbiage) were the most frequently observed item flaws (Tarrant & Ware, 2008). In assessing functional and non-functional distractors, Tarrant et al. (2009) found that 52.2% (n = 805) of all distractors were functioning effectively and 10.2% (n = 158) had a choice frequency of 0.

In one of the recent studies, Almuheidib (2010) found that the average frequency of flawed items was 17.64%. The author also found that flawed items were easier and poorly discriminating than standard items and that they tend to benefit low-achieving students and penalise their high achieving counterparts. Another recent study reported that 85% of MCQs had at least one flaw in a hospital professional development program for nurses (Nedeau-Cayo et al., 2013). A study in Pakistan reported that 69 IWFs (46%) were found in 150 MCQs (Baig et al., 2014). In a related study, DiSantis et al. (2015) found that seventy-eight of the 181 (43%) questions contained one to four flaws. In the same vein, Sood et al. (2016) found that IWFs were discovered in 45% of the MCQs. Flawed MCQs mostly (84%) had a solitary IWF with only 15% had two each. Most of the IWFs were traceable to carelessness with the usage of language. Congruently, Rush et al. (2016) found that more than one item-writing flaw was identified in 37.3 % of questions. The most common item-writing flaws were awkward stem structure, implausible distractors, longest response is correct, and responses are series of true-false statements. Synthesising these findings, Omer et al. (2016) in Saudi Arabia found that 39 items were flawed containing 49 violations of the item-writing guidelines. The study concluded that flawed items were less difficult, less discriminating and less reliable than standard items. Correspondingly, Pais et al. (2016) found that 55.8 % of the MCQ were flawed items.

In a more recent study, Kenneth and Mari-Wells (2017) revealed that approximately one in five items contained a construction flaw, with the overwhelming majority of flaws involving poor quality distractors. More recently, Tarig et al. (2017) found that the proportion of flawed items out of 150 items in six exams ranged from 16% to 52%. The percentage of total flawed items was 28%. Most common types of flaws were implausible distractors 19.69% (26), extra detail in correct option 18.18% (24), vague terms 9.85% (13), and unfocused stem 9.09% (12) and absolute terms 9.09% (12). Harmoniously, Costello et al. (2018) found that 50% of the MCQs (112) have one or more item writing flaw, while 28% of MCQs (57) contain two or more flaws. Thus, a majority of the MCQs in the dataset violate item-writing guidelines, which mirrors findings of previous research that examined rates of flaws in MCQs in traditional formal educational contexts. Synchronising these results, Abouelkheir (2018) in Riyadh, KSA, found that 55% of the examinations questions were flawed.

Cognitive Processing Skills Required in Examination Questions

Cognitive processing (thinking) refers to the use of mental activities and skills to perform tasks such as learning, reasoning, understanding, remembering, paying attention, and more. Cognitive skills are the core skills our brain uses to think, read, learn, remember, reason, and pay attention. A plethora of research exists attempting to examine the cognitive processing (thinking) skills required in examination questions. For example, Alfaki (2014) found that that 89% of the Sudan English language syllabus questions are actually low order thinking skills questions, 59% are remembering and

30% are understanding. None of the questions are geared to the high order thinking skills. In the same year, Okanlawon and Adeot (2014) in Nigeria indicate that the majority of the Chemistry examinations questions constructed by the WAEC required LOCS. Similarly, Assaly and Smadi (2015) found that about 40% of the master class textbook's questions emphasized higher-order thinking skills, which goes with the requirements of the revised curriculum.

Also, Tarman and Kuran (2015) found that the 6th grade prep questions were found to be at a low level (84.2%), open-ended assessment questions were at a high level (70.2%), and the multiple-choice assessment questions were at a low level (85%). The 7th grade prep questions were low level at 71.3%, open-ended assessment questions were high level at 66.6%, and 93.05% of multiple-choice questions were low-level questions. Similarly, Zareian et al. (2015) using Bloom's taxonomy found that most of the questions in two English textbooks were aligned with remembering, understanding and applying as the three lower-level categories, while analyzing, evaluating, and creating as the three higher-level categories constituted the lowest frequency in the two textbooks.

In a related vein, Upahi et al. (2015) indicated that about 80% and 44% of the questions require lower-order cognitive skills (LOCS) and factual knowledge respectively. The results further revealed that there was no question in the evaluate category of the HOCS, and none of the questions required students to apply metacognitive knowledge. Also, Rahpeyma and Khoshnood (2015) found that in three grades, the first three low levels in BRT were the most prevalent than higher learning levels in Iranian junior high school English text books. Relatedly, Roohani (2015) found that the higher-order processes (i.e., analyzing, evaluating, and creating) were less frequently represented in the Top-Notch textbooks than lower-order ones (i.e., remembering, understanding, and applying). Moreover, Sadeghi and Mahdipour (2015) revealed that the lower order cognitive skills were more prevalently used than the higher order ones in Iran Language Institute textbooks. Equally, Taghipoor (2015) revealed comprehension as receiving the most attention and evaluation the least attention in empirical science textbook of the sixth grade. Relatedly, Zamani and Rezvani (2015) revealed that lower order thinking skills were more frequently targeted and represented than higher order ones in all the textbooks. However, they found a considerable difference in the language testing among the three textbooks in terms of its manifestation of higher order thinking skills. Also, Ebadi and Shahbazian (2015) revealed that all the items of first and second grades were at the first three levels of the taxonomy which was mostly the lower order of thinking.

Most recently, Rush et al. (2016) found that higher cognitive skills (complexity level III-IV) were required to correctly answer 38.4 % of examination items. Also, Abosalem (2016) showed that all test items measure the lower three levels in Bloom's taxonomy. In the same year, Ulum (2016) found that the course book lacked the higher level cognitive skills involved in Bloom's taxonomy. Also, Soleimani and Kheiri (2016) found that lower order thinking skills (69.445%) were used more than medium (30.555%) thinking skills in MA testing classroom activities, but higher order thinking skills (0%) were never used. On the other hand, medium order thinking skills (58.335%) were used more than higher order thinking skills (41.665%) in PhD testing classroom activities, and lower order thinking skills were never used. Moreover, activities and assignments given to postgraduate students first led to lower order thinking skills, next led to medium order thinking skills, and finally led to higher order thinking skills. Once more, Upahi and Jimoh (2016) found that the majority (76%) of the chemistry textbooks

questions were at lower order (remember, understand, and apply) while 46% and 32% of the questions measure conceptual and procedural knowledge respectively. There was no metacognition questions.

In the same year, Upahi et al. (2016) revealed that 80% of the WASSCE chemistry questions merely measured students' lower order cognitive skills (LOCS), while 49.4% and 19.5% of the questions measured conceptual and procedural knowledge respectively. The results further revealed that none of the questions require students to employ their cognition (metacognitive knowledge). In the same year, Ebadi and Mozafari (2016) indicated lower order skills as the most represented levels in TPSOL books. The findings indicated that the analyzed textbooks would not foster critical thinking ability in learners because their content did not correspond to BRT. Similarly, Rezaee and Golshan (2016) found that English final tests consisted of different questions which were related to knowledge, comprehension and application levels of Bloom's taxonomy of educational objectives. Moreover, in the third grade high school English final exam, comprehension level of Bloom's taxonomy was more dominant, while in the second grade high school English final exam, knowledge and comprehension levels of Bloom's taxonomy were more dominant.

In a more recent development, Tarig et al. (2017) found that the majority of the SAQs (90.7%) were assessing recall of the information and only 9.3% were assessing interpretation of data while none of the questions was assessing the problem-solving skills. In the same year, Kasim and Zulfikar (2017) revealed that out of 227 instructional questions (listening, reading, speaking, and writing activities), most of those instructional questions emphasized LOTS (198 questions). Similarly, in Ghana, Cobbinah et al. (2017) revealed that the level of thinking required in 2014 Mathematics WAEC multiple choice items from the students were different from one level to another. However, the items that required higher level of thinking were 34(68%) which is higher than the items requiring lower level of thinking, 16(32%). Thinking required by 2013 Mathematics WAEC multiple choice items varied, and the items required students to demonstrate both lower and higher level of thinking skills. Equally, Tangsakul et al. (2017) showed that the levels of reading comprehension questions found in Team Up in English 1-3 and Grade 9 English O-NET tests academic years 2013-2016 were similar and were in low levels of reading comprehension questions. Additionally, Mizbani and Chalak (2017) revealed that all of the activities of listening and speaking skills were classified as the low level of cognitive complexity and could not train the students of this grade for high levels of learning objectives. In a more recent study, Köksal and Ulum (2018) found that the exam papers lacked the higher level cognitive skills contained in Bloom's Taxonomy. In the same year, Solihati and Hikmat (2018) showed that the textbooks did not contain many tasks promoting critical thinking. Besides this, tasks potentially encouraging students' critical thinking were not varied.

Research Methods

The study employed descriptive content analysis rooted in the quantitative approach to appraise and classify the WASSCE May/June questions in Business Management for the period of eight years (2011-2018). This design helps to describe the phenomenon and monitors the occurrence of the categories of analysis accurately. The source of data for the study consisted of 566 WASSCE questions in Business Management conducted by WAEC for the period of eight years (2011-2018). This composed of 400 MCQs and

166 Essay questions. In each year, there are usually 50 MCQ and 8 essay questions with many sub-questions. For ease of analysis, each sub-question within the essay question was taken as a single question to be analyzed. The study adopted the framework of Bloom's taxonomy as a major categorization tool to classify the examinations questions into the cognitive process skills it emphasised. The examination questions were also classified into lower order cognitive skills (LOCS) and higher order cognitive skills (HOCS).

For identifying the types of IWF's in the MCQs, item-writing guidelines/principles suggested by Etsey (2012) was used in the study. The MCQs were analysed, categorised and classified as standard or flawed items. An item was categorised and classified as flawed if it violated at least one of the principles/guidelines of item writing. To establish the validity of content analysis, the researcher consulted two experts from WAEC who Examiners in Business Management are. To determine the reliability of the research, 10% of the analysed questions were randomly selected and autonomously analysed by one of the fellow researchers and a Chief Examiner of Business Education who understand the Bloom's revised taxonomy and its application for classifying examination questions. The value of Cohen Kappa statistic coefficient of agreement for the cognitive process skills was estimated based on the classification of the raters and the value was 0.74. The high coefficient for the classification indicates a good measure of agreement between the two raters and this guarantee a high reliability of the research. The data was processed using SPSS version 22.0 and analysed using frequency and percentages

Results and Discussion

This section presents the results, interpretation and discussion of the findings. The results and discussion are based on the three research questions that guided the study.

Item-Writing Flaws (IWFS) in WASSCE May/June Multiple-Choice Questions in Business Management (2011-2018)

The objective of this research question was to identify item-writing flaws (IWFs) in WASSCE May/June multiple-choice questions in Business Management for the period of eight years (2011-2018). The MCQs were analysed, categorised and classified as standard or flawed items based on item writing guidelines/principles suggested by Etsey (2012). The results were presented in Table 1.

Table 1: Item Writing Flaws (IWFs) of WASSCE May/June MCQs

Years	Standard	Flaws	Nature of Flaws
	f(%)	f(%)	
2011 (n=50)	24(48.00)	26(52.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2012 (n=50)	22(44.00)	28(56.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2013 (n=50)	23(46.00)	27(54.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2014 (n=50)	21(42.00)	29(58.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2015 (n=50)	23(46.00)	27(54.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2016 (n=50)	31(62.00)	19(38.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
2017 (n=50)	41(82.00)	9(18.00)	unfocussed stem, unequal options length, not in

			alphabetical, chronological, logical and sequential order
2018 (n=50)	40(80.00)	10(20.00)	unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order
Total (n=400)	225(56.00)	175(44.00)	unequal options length, not in alphabetical, chronological, logical and sequential order

Table 1 indicates the results of the item writing flaws (IWFS) of WASSCE May/June MCQs in Business Management for the period of eight years (2011-2018). It was found that the year 2014 recorded the highest IWFS (n=29; 58%). This was followed by the year 2012 with the second highest IWFS (n=28; 56%) while the year 2017 had the lowest IWFS (n=9; 18%). From these results, it is evident that out of 400 MCQs (2011-2018), 225(56%) of them were standard (having no flaws) while 175(44%) of the MCQs contained flaws. This suggests that on average, out of 50 MCQs in each year, 22 of them contained flaws. Most of the flaws identified within these questions are unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order. The implication of these results is that the examiners in WAEC never considered arranging any of the options in any particular order. Options were placed not in accordance with any sequence or in alphabetical order. Probably, the items' options were left haphazard because it could have created a discernible pattern in the responses for the questions which the constructors wanted to avoid. The sequential arrangement of options could have also possibly, by default, skewed a lot of the right responses to a particular letter. These flaws could be associated to WEAC intention of reshuffling the options for the member countries (Nigeria, Liberia, Ghana, Sierra Leone and Gambia).

The results of the current study disagreed with the suggestions made by researchers that when possible, alternatives or options should be presented in some logical order (e.g., chronological, most to least, alphabetical) (Clay & Root, 2001; Etsey, 2012). Etsey (2012) argued that when the responses are arranged in a sequential order, it reduces the unnecessary searching on the part of the respondents. Etsey (2012) and Clay and Root (2001) recommended that the responses to a given question must be parallel in form. Clay and Root (2001) added that responses to a given question must be of the same sentence length, of similar number of words, and of the same word composition. Haladyna and Rodriguez (2013) asserted that the variation in the length of the options for a given stem, gives students clues to consider either of the categories (lengthy or short option) as the answer.

The results of the current study are in agreement with the findings of previous researchers who found that most of the examination questions or questions in the textbooks at the lower cognitive levels had more item writing flaws (Masters et al., 2001; Downing, 2002, 2005; Tarrant et al., 2006, 2008; Almuheidib, 2010; Nedeau-Cayo et al., 2013; Baig et al., 2014; DiSantis et al., 2015; Omer et al., 2016; Pais et al., 2016; Costello et al., 2018; Abouelkheir, 2018). In relation to the nature of the flaws within the questions, the results are similar to the findings of researchers who identified negative stems, unfocused stems, awkward stem structure, unequal options length, extra detail in correct option, implausible distractors, usage of language, and “window dressing” (i.e., excessive verbiage) as the most frequently observed item flaws (Tarrant & Ware, 2008; Sood et al., 2016; Rush et al., 2016; Kenneth & Mari-Wells, 2017; Tarig et al., 2017).

Cognitive Processing Skills Required in WASCCE May/June Questions in Business Management (2011-2018)

The objective of this research was to assess the cognitive processing skills required in WASSCE May/June questions in Business Management for the period of eight years (2011-2018). The results were analysed and categorised using Bloom' taxonomy and presented in Table 2.

Table 2: Cognitive Processing Skills of WASSCE May/June Examination Questions

Years	Bloom's Taxonomy-Cognitive Domain					
	Level 1 <i>f</i> (%)	Level 2 <i>f</i> (%)	Level 3 <i>f</i> (%)	Level 4 <i>f</i> (%)	Level 5 <i>f</i> (%)	Level 6 <i>f</i> (%)
2011 (n=73)	40(55.00)	27(37.00)	1(1.00)	5(7.00)	0(0.00)	0(0.00)
2012 (n=66)	39(59.00)	22(33.00)	1(2.00)	4(6.00)	0(0.00)	0(0.00)
2013 (n=70)	35(50.00)	25(36.00)	2(3.00)	7(10.00)	1(1.00)	0(0.00)
2014 (n=70)	47(67.00)	15(21.00)	2(3.00)	5(8.00)	1(1.00)	0(0.00)
2015 (n=72)	44(61.00)	20(28.00)	2(3.00)	5(7.00)	1(1.00)	0(0.00)
2016 (n=68)	35(52.00)	27(40.00)	3(4.00)	3(4.00)	0(0.00)	0(0.00)
2017 (n=75)	41(55.00)	27(36.00)	1(1.00)	5(7.00)	0(0.00)	1(1.00)
2018 (n=72)	33(46.00)	24(34.00)	7(10.00)	6(8.00)	1(1.00)	1(1.00)
Total Counts	314(56.00)	187(33.00)	19(3.00)	40(7.00)	4(0.70)	2(0.30)

Table 2 shows the results of the cognitive processing (thinking) skills required in WASSCE May/June questions in Business Management for the period of eight years (2011-2018) (both MCQs and Essay items). It was found that for the eight years period (2011-2018), most of the WASSCE questions in Business Management highly emphasise the knowledge and comprehension level of the students. Few of the questions were in the analysis and application level. On average, it was found the majority (n=314; 56%) of the questions measured the knowledge level of the students while 187(33%) and 40(7%) measured comprehension and analysis level of the students respectively. The questions were further categorised into lower-order thinking skills (LOTS) and higher order thinking skills (HOTS). It was found that most (n=501; 89%) of questions measured lower order thinking skills of students while only 65(11%) of the questions measured higher order thinking skills of students.

It is concluded from these results that examination questions dealing with higher order thinking skills are consistently lacking in all the years discussed in this study. These results violate the principle of "profile dimensions" of the Business Management curriculum which is the central aspect of instruction and assessment. In Business Management, the two profile dimensions that have been specified for teaching, learning and testing are: Knowledge and Understanding 45% and Application of Knowledge 55%. The percentage weights of each dimensions show the relative emphasis that the teacher should give in the teaching, learning and testing processes. The focus of Business Management curriculum is to get students not only to acquire knowledge but also to understand what they have learnt and apply them practically.

Per this, it is reasoned from these results that WAEC examiners of Business Management failed to implement recommendations made by researchers that call for the use of questions that encourage and foster higher level thinking skills (analysis, synthesis, and evaluation) among students. Thus, WEAC examiners of Business Management only provide questions that are designed to help students to acquire factual knowledge rather than to think. The implication of these results is that WAEC examiners of Business Management are not supporting the current reforms in Business Education that encourage and support for the improvement of students' higher-order cognitive skills through question-asking, critical thinking, decision making and problem solving. The dominance of LOTS-oriented questions in these high-stakes and nationwide Business Management examination questions could possibly impact on instruction, particularly, on where schools put their emphases, how and what the teachers teach, as well as, students and teachers who rely on such questions for practices and assessments.

The results of the current study confirmed the findings of earlier researchers who found that most of the examination questions or questions in the textbooks were aligned with remembering, understanding and applying as the three lower-order thinking skills (LOTS) while analyzing, evaluating, and creating as the three higher order thinking skills (HOTS) constituted the lowest frequency (Assaly & Smadi, 2015; Zareian et al., 2015; Tarman & Kuran, 2015; Upahi et al., 2015; Rahpeyma & Khoshnood, 2015; Roohani, 2015; Sadeghi & Mahdipour, 2015; Taghipoor, 2015; Zamani & Rezvani, 2015; Ebadi & Shahbazian, 2015; Rush et al., 2016; Abosalem, 2016; Ulum, 2016; Soleimani & Kheiri, 2016; Upahi & Jimoh, 2016; Upahi et al., 2016; Ebadi & Mozafari 2016; Rezaee & Golshan, 2016; Tarig et al., 2017; Kasim & Zulfikar, 2017; Cobbinah et al., 2017; Tangsakul et al., 2017; Mizbani & Chalak, 2017; Köksal & Ulum, 2018; Solihati & Hikmat, 2018).

Conclusions and Recommendations

The purpose of the study was to appraisal of West African Senior School Certificate Examination May/JUNE questions in Business Management. Concerning research questions one, it was concluded that on average, out of 50 MCQ, 22 of them contained flaws in each year. Most of the flaws identified within these questions are unfocussed stem, unequal options length, not in alphabetical, chronological, logical and sequential order. This implies the assessment principles in constructing multiple-choice items are adhered to. Multiple-choice items that do not adhere to test construction guidelines might present construct-irrelevant variance to an assessment. Consequently, MCQ in Business Management might lose its value altogether due to presence of IWFs. The flawed items might render examination questions easier or more difficult than intended which can significantly affect the students. The flawed items might reduce the quality of the test (validity and reliability of the items).

To research question two, it was concluded that the lower order cognitive skills (LOCS or LOTS) were more prevalently used than the higher order ones in WASSCE May/June questions in Business Management conducted by WAEC for eight years period (2011-2018). Consequently, WAEC examiners of Business Management were unable to construct tests that required higher order thinking skills of the students. These LOCS questions might not allow the students to reasoned or use their intellectual capabilities. The dominance of LOCS questions by WAEC in Business Management might negatively instruction, particularly, on where schools put their emphases, how

and what the teachers teach, as well as, students and teachers who rely on such questions for practices and assessments.

The study recommended that further training, workshops and faculty development programmes in item-writing should be organised for all WAEC faculty members or chief examiners who are responsible for developing tests in Business Management. The WAEC should ensure that chief examiners follow assessment principles in constructing multiple-choice items in order to avoid item writing flaws (IWFs). The study recommended that WAEC should ensure that May/June examination questions in Business Management are carefully crafted and designed taking into consideration the profile dimensions of the curriculum in order to develop students' higher-order cognitive processing skills. To meet the present reforms in Business Education that call for the improvement of students' higher-order cognitive skills then, Business educators should significantly change from the predominant old-fashioned "testing" (lower-order cognitive skills-assessment methodologies) to modern sophisticated "testing" (higher-order cognitive skills-assessment methodologies) that can lead to improved students' problem solving capabilities.

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