

THE CHALLENGES OF ASSESSING COMPETENCIES AND ITS IMPLICATIONS ON PERFORMACE IN NATIONAL EXAMINATIONS IN UGANDA

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Abstract. The Ministry of Education and Sports (MoES) in Uganda has been undergoing reforms over the last ten years in order to improve the quality of education. The new reforms led to the emergence of the Uganda Business and Technical Examinations Board (UBTEB) in the conduct of examinations from certificate to diploma level following a competence based assessment. However, the learner's pass rates are generally low raising concerns from educational stakeholders. This paper aimed at analyzing the root causes of low pass rates in UBTEB examinations at diploma level. Respondents were obtained through quarter random sampling techniques. Data collection was through questionnaires, interview guide, question analysis checklist, observation checklists and document review. The study revealed that institutions have inadequate internet connectivity, reference text books, ill equipped laboratories and workshops. The study further revealed that entry qualification; inadequate syllabus coverage; inappropriate curriculum; inappropriate methods of assessment used by lecturers and lecturers not oriented on the competency based curriculum are the major factors that led to poor learners' performance. On the other hand the results show that there is a strong relationship between what is covered in the examination papers and the content of the subject syllabi. It recommended equipping of colleges; re-tooling of lecturers with pedagogical skills; orient stakeholders on curriculum and strict supervision of the teaching process.

Key words: assessment, competence, stakeholders.

1 Introduction

Nearly two decades ago the Government of Uganda initiated a commission popularly known as the Education Policy Review committee of 1989 to study weakness in the Ugandan Education system. The findings of the committee were published in the Government White Paper on Education of 1992 that calls for addressing the inadequacies detected in the Education Policy Review committee. One of the major weaknesses at the point in time was a narrow testing focus, which emphasized recall of factual information at the expense of application, reasoning, and problem-solving skills; the absence of attempts to test practical skills or social attitudes; and lack of any attempt at continuous classroom assessment. In order to address some of the gaps in assessment pointed out, the Ministry of Education and Sports instituted reforms. The new reforms led to the emergence of the Uganda Business and Technical Examinations Board (UBTEB) in the conduct of examinations from certificate to diploma level following a competence based assessment. However, the learner's pass rates have been generally low (below 50%) in the subjects as reflected in Table 1, raising concerns from educational stakeholders.

Table 1. Percent Pass Rate: Adopted from UBTEB May/June 2013 Results.

Category	Subject	% Pass rate
1 Technical	Engineering Mathematics	55.6%
2 Business	Shorthand I	33%
3 Specialized	Photogrammetry	48.8%
	Veterinary Parasitology	40.85

Engineering Mathematics has been included as an exception although its pass rate was 55.6%, which is slightly above 50% because this subject is offered by all students offering engineering programs. Therefore, a

pass rate of 55.6% meant that the proportion of learners in this subject who did not acquire the competencies, make a very large contribution to the overall poor performance in national examinations.

This study investigates the root causes of low pass rates in UBTEB examinations in the subjects reflected in Table 1 at diploma level, with the view of proposing improvement in the different areas of concern. Noting with great concern, the boards' top management demanded that the examinations department should explore the causes of the poor performance. It is against the above background, that the researcher was motivated to conduct this study. Furthermore, the study will guide the policy makers in allocating resources; curriculum developers and educationalists, on areas of the curriculum that need to be improved; and the board in addressing quality related issues.

1.1 Statement of the Problem

The number of learners sitting examinations has steadily grown over the last three years. However, the performance of learners at diploma level is not satisfactory as evidenced in the past series of examinations conducted. In almost all the subjects in Table 1, the pass rate recorded was below 50%. At UBTEB, whenever the failure rate equals or exceeds 40% a need for an investigation into its causes arises. High failure rate is impacting negatively on the boards' public image, and may lead to a short supply of middle cadre professionals (in business, technical, agriculture, lands and surveys) in the labour market. Furthermore, the low learners pass rates in examinations may prompt donors to withhold their financial support to the GoU thus widening and worsening the situation. The study therefore explored the causes of poor performance in UBTEB examinations.

2 General Objective

The main objective of the study was to establish the main root cause of low pass rates in UBTEB examinations in tertiary institutions at diploma level.

2.1 Specific Objectives

Specifically the study focused on the following:-To,

- I. investigate the factors affecting the learner's pass rate,
- II. assess the extent to which lecturers are able to demonstrate competencies in preparing candidates for UBTEB examinations,
- III. determine the content validity of question papers of subjects of examinations reflected in Table 1.

2.2 Research Questions

The study was guided by the following research questions:

- I. What are the factors that caused the poor performance in the May/June 2013 examinations?
- II. To what extent are lecturers able to demonstrate competencies in preparing candidates for UBTEB examinations?
- III. To what extent is the validity of the content of question papers of subjects reflected in Table 1 appropriate for the level?

3 Literature Review

Various scholars Greenwald (1996) and Obong (2008) discuss several factors that have been thought of as determinants or influential elements that affect students' academic achievement in the schools. Among these factors that contribute to poor performance in examinations are: school factors, out of school factors, curriculum appropriateness and unsuitability of questions in the examinations. The school factors include: academic qualifications of teachers/instructors, lack of instructional materials and the instructional methods

of delivery. The out of school factors include: the social class of the family and the society/family attitude towards education.

Obong (2008) studied the causes of poor performance in Community Polytechnic Certificate Examinations (CPC). The findings revealed that poor performance in the CPC examinations 2006 was as a result of lack of clear curriculum to guide the CP courses; Under qualified instructors with less experience in teaching Community Polytechnics (CPs) ; Poor methodology used by the instructors in the teaching learning process and poor quality students admitted in the CPs. In another study, Ajay (2012) revealed that causes of mass failure of students in West African Senior School Certificate Examinations (WASSCE) were multi-dimensional in nature. Aworanti (2012) examined the perceived causes of candidates' poor performances in National Business and Technical Examinations Board (NABTEB) certificate examinations. The paper addresses among others, such factors as institutional, environmental psycho-social, home and teacher-related factors that lead to candidates' failure in examinations. A study on the relationship between entry qualifications and candidates performance in the ordinary diploma in engineering courses (Ogwang, 2012), revealed that: the UACE level direct entrants performed better in Mathematics and Science, on average, than their counterparts who had Advanced Craft Certificates; and on the other hand in papers with the practical component, Advanced Craft students were on average better. Mwenda E. E, et al (2013) study sought to establish the Factors Contributing to Students Poor Performance in Mathematics in Public Secondary Schools in Tharaka South District, Kenya. The findings attributed the factors leading to poor performance to include: inadequate teaching force, students' absenteeism, poor entry marks, poor assessment techniques and poor teaching methods.

Kamwine (2012) carried out a detailed study on competence based teaching and learning in the Ordinary level in Uganda. The major findings of the study revealed that the methods used in teaching in secondary schools were largely theoretical owing to inadequate time due to too much subject content, large number of students in classes, limited teaching, and learning resources and laziness on the part of some teachers. Kondo (2013) explored the essential learning competencies for assessing students from technical institutions. The study revealed that most of teachers in technical institutions lack competences in setting questions in a competence based education and training way.

Kitila (2013) examined the content validity of the Form Four National Examinations in assessing the curriculum objectives in Tanzania. The results show a strong relationship between the examination papers and subject syllabi content, suggesting that the examinations may not be a cause of students' poor performance.

4 Methodology

The study adopted exploratory research design to collect both qualitative and quantitative data. Data collection was done using questionnaires, question analysis checklist, interview guide and document review. The population comprised of 170 UBTEB second year students from 12 colleges, 26 examiners and 19 lecturers drawn in such a way that there at least three for each subject. Twelve institutions participated in the study: four colleges from each of Business (4), Technical (4) and Specialized (4), twelve principals from the selected colleges, one Official from the Business Technical and Vocational Educational Training (BTVET) sub-sector plus three curriculum development specialists. Responses from the questionnaires were analyzed using STATA package while the interview guides in EXCEL.

5 Results and Discussion

The results of the study are presented according to the research questions.

5.1 Factors that caused the poor performance in the examinations

The study sought to establish from the observation checklists, interview guides, principals' and students' questionnaires the causes of poor performance in examinations. From the observation checklist it was noted that only two of the twelve colleges visited had spacious library space to sit over 200 learners at once, yet on average the total enrolment was over 400 learners the visited colleges . It was noted that what institutions referred to as library in most cases was a small book store with a handful of seats. It was also noted that the student to computer ratio was proportionally high in all the institutions. Furthermore, only a small proportion

of computers could access internet. Since it is a known fact that inadequate school resources, more often than not is denoted by poor examination results, probably this may have contributed as well.

Curriculum Appropriateness

From the interviews conducted with curriculum and BTVET officials, it was established that 3 out of 4 indicated that technical and business had a curriculum that has been updated but key educational stakeholders including lecturers had not been oriented due to lack of funds. Other factors identified by interviewees as possible causes of poor performance included misinterpretation and poor coverage of new topics (3); biasing the assessment (3); and underscoring learners (4). On the other hand all the four interviewees indicated that specialized programs had non streamlined curriculum.

Out of the 12 principals, who took part in the study 50% attributed poor learners performance to inadequate syllabus coverage and lack of internet connectivity in as reflected in Table 2.

Table 2: Summary of Causes of Poor Performance

Causes of Poor Performance	Frequency	Percentage (%)
Inadequate syllabus coverage	6	50 %
Lack of Internet connectivity	6	50 %
Low involvement of Lecturers to set	4	33 %
Ill equipped workshops & laboratories	3	25%
Lack of reference books in the library	3	25%
Setting questions outside the syllabus	3	25%
Lack of Induction for Lecturers	3	25%
Poor lecturers/Lack of Lecturers in some modules	2	16%
Lack of competent examiners	2	16%
Late reporting at beginning of semesters	2	16%
Learners are not self driven	1	8.3%
Employing part time Lecturers		

Obviously, lack of internet connectivity in institutions is a major hindrance to students' research. Only 4 out of 12 principals indicated low involvement of lecturers in the setting of examinations contributed to poor performance. Out of 12 principals, 25% attributed other factors that may have caused poor performance to lack of induction for lecturers; questions were set outside the syllabus; and inadequate library resources. (Brownell, M. et al, 2009) asserts that teacher quality is a single most powerful influence on student achievement. Therefore, inadequate teaching may negatively contributed to the low learner performance in examinations.

Factors affecting Learners' Pass Rates

Table 3 presents descriptive summary of learners who participated in the study and their characteristics of gender, entry qualifications and whether they passed previous exams.

Table 3: Learners Characteristics'

Students' Characteristics	N	Percentage (%)
Gender		
Female	45	26.5
Male	125	73.5
Total	170	100.0
Entry Qualification		
Advanced Certificate	55	32.4
Advanced Level	115	67.6
Total	170	100.0
Passed Examinations		
Yes	102	60
No	68	40
Total	170	100.0

The students who responded in this study are mainly male (73.5%) and majority (67.6%) joined the colleges with an advanced level of education certificate. More than half of the learners (60%) had passed the May/June 2013 UBTEB examinations. A number of variables were used to investigate factors affecting students' performance. In addition to the learners' characteristics they include; Syllabus coverage, Tuition payment problems, Accommodation problems, Relationship problems with opposite sex, Difficulty UBTEB examination component and their involvement in social events like Discotheque, Drinking joints and Sports Betting. Relationships between the dependent variable (passing) and the independent variables are investi-

gated using chi-square statistic as shown in Table 4.

Table 4: Differentials in Outcome of the Test by Learners' Characteristics

Variable	Frequency	Pearson chi ²	p-value
Gender		1.1333	0.287
Entry Qualification		21.9499	0.000*
Report to College		0.2642	0.607
Promptly	143		
Not Promptly	27		
Syllabus Coverage		6.0180	0.014*
Yes	77		
No	93		
Tuition Problems		0.3058	0.580
Yes	49		
No	121		
Accommodation Problems		0.0362	0.849
Yes	21		
No	149		
Difficulty UBTEB Component		7.5939	0.055
Theory	118		
Practical	36		
Theory & Practical	7		
None	9		
Relationship Difficulty		0.1657	0.684
Yes	18		
No	152		
Attend Discotheque		5.3947	0.020*
Yes	12		
No	158		
Go to Drinking joints		0.0139	0.906
Yes	13		
No	157		
Participate in Sports betting		0.3047	0.581
Yes	15		
No	155		
College		19.4580	0.022*

P < 0.05 : level of significancy

The results in Table 4 indicate that passing of examination by students is significantly associated to; entry qualification ($p = 0.000$), syllabus coverage ($p = 0.014$), attendance of discotheque and institute attended $P < 0.05$. The results further show that there is no relationship between learners passing and: gender, tuition problems, accommodation issues plus other social behavior variables. The significant variables were further analyzed using a logistic distribution to investigate their effect on the dependent variable. The results are shown in Figure 1.

The results indicate that having an A-level entry requirement increases the chances of learners passes by 4 compared to learners who join with an Advanced certificates ($p = 0.000$). It further indicates that completing a syllabus increased the odds of a learners passing by 2.6 compared to those who do not complete the syllabus. However attendance of a discotheque does not affect students' passing of exams.

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.logistic pass entryqualification discotheque coversyllabus

Logistic regression          Number of obs =    170
                             LR chi2(3) =    32.81
                             Prob > chi2 =    0.0000
                             Pseudo R2 =    0.1434
Log Likelihood = -98.008367

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pass	odds Ratio	Std. Err	Z	P> Z	95% conf. Interval
entryqualin	4.729176	1.746712	4.21	0.000	2.292956 9.753829
discotheque	5.562549	5.980693	1.60	0.110	0.6762173 45.75741
coversyllas	2.640312	.9409355	2.72	0.006	1.313138 5.308849

Fig. 1. Logistic distribution

5.2 Demonstration of Competencies by Lecturers

Competence of lecturers who responded to the questionnaire was verified by the highest qualification attained as shown in Table 5.

Table 5: Lecturers' Qualification

Qualification	Gender		Total	%	Cumm %
	Female	Male			
Masters	1	1	2	10.5	10.5
Bachelors	2	10	12	63.1	73.6
Higher Diploma		1	1	5.3	78.9
Diploma	1	3	4	21.1	100
Total	4	15	19	100	

The higher the qualification the more competent the respondent is expected to be. Results from Table 5 show that most of the lecturers (78.9%) are competent, since they possess higher diploma qualification and above.

Lecturers teaching experience is illustrated in Figure 2.

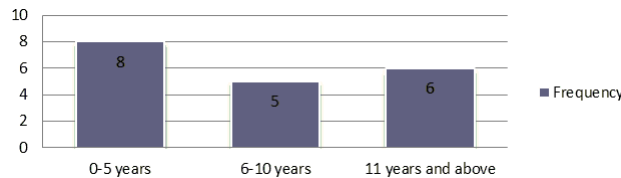


Fig. 2. Teaching Experience of Lecturers.

Slightly more than half of lecturers (11, 58%) have a teaching experience of 6 years or more.

Lecturers rated the UBTEB examinations and the curriculum used as shown in Table 6.

Table 6: Lecturers Rating of UBTEB Examinations and Curriculum

Variable	Frequency	Percentage (%)
Rate of UBTEB Exams/Response		
Average	16	88.9
Difficulty for the level	2	11.1
NCDC Curriculum		
Appropriate	6	33
Not Appropriate	12	67

From the results of table 6 majority of lecturers (16, 88.9%) rate the UBTEB exams as average and the curriculum as not appropriate (12, 67%).

Indicators of demonstration of competence were attributed to: teaching and assessment methods; frequency of conducting practical lessons; period to start teaching practicals and whether syllabus is followed. The rating of lecturers' competence is illustrated in Table 7. The results show that, lecturers follow the designated syllabus whole heartedly (100%), more than half (63.2%) use appropriate methods of teaching but their methods

of assessment are not appropriate (57.9%). The three lecturers who don't conduct practicals teach mathematics. Inappropriate methods of teaching considered included any two of these: lecture, question and answer, drills and tests. On the other hand the study considered inappropriate methods of assessment as tests only or question and answer. However 52.6% (10) indicated that they do not have enough practical equipment.

Table 7: Rating of Lecturers Competences

Variable	Frequency	Percentage (%)
Methods used for Teaching		
Appropriate	12	63.2
Not Appropriate	7	36.8
Methods for Assessment		
Appropriate	8	42.1
Not Appropriate	11	57.9
Frequency of Conducting Practical Lessons		
Once a week	8	42.1
Twice a week	3	15.8
Every Lesson	5	26.3
None	3	15.7
Follow Syllabus		
Yes	19	100
No	0	

5.3 Content Validity of question papers

The study further sought to determine the content validity of question papers. Content validity ratios were computed for four subject examination papers that is Engineering Mathematics, Veterinary Parasitology, Photogrammetry and Shorthand I for the year 2013. Table 8 shows the characteristics of examiners that determined the content validity of subjects using checklists.

Table 8: Frequency Distribution of Examiners Academic qualifications

Subject	Number of Examiners by Highest qualification				
	Masters	Bachelors Degree	Higher Diploma	Diploma	Total
Veterinary Parasitology	2	1			3
Engineering Mathematics	3	8	3		14
Shorthand I	2			3	5
Photogrammetry		1		3	4
Total	7	10	3	6	26

Lawshe (1975) formula was used to compute content validity ratios for each question in the three subjects. The Lawshe (1975) formular for computing content validity ratio (CVR) is

$$CVR = \frac{Ne - (N/2)}{(N/2)} \quad (1)$$

Ne = number of subject experts indicating essential; N = total number of subject experts in the panel; N/2 = Half the number of subject experts. The content validity for each subject, determined by Content validity Index (CVI), was computed by obtaining the average of the content validity ratios of all the questions that made up the test. The results in Table 9 show that all the CVRs in the subjects are greater than zero. This suggests that more than half of all examiners in the different subjects rated the questions as relevant to the subjects under review. The results further show that CVI for Mathematics and Veterinary Parasitology are statistically significant basing on Lawshe (1975) Table of Minimum value of CVR Table 10 to be achieved at the 0.05 level of significance. However the CVI for Shorthand I and Photogrammetry is not statistically significant, implying that Shorthand I and Photogrammetry may not be content valid.

Table 9: Content Validity Ratios

Question Number	Content Validity Ratios for 2013 by subject			
	Engineering Mathematics	Veterinary Parasitology	Shorthand I	Photogrammetry
1	1	1	0.3333	0.9167
2	0.9643	1	0.625	0.4167
3	0.9643	1		0.8333
4	0.9643	1		0.8333
5	0.9821	1		0.9167
6	0.9286	1		0.8333
7	0.9821	1		0.5833
8	0.9821	1		0.5833
CVI	0.970	1	0.4791	0.7396
Number of Raters	14	2	5	3

Table 10 shows the minimum values of CVR to be achieved to ensure that the agreement among raters is unlikely to be due to chance or error at 0.05 probability level.

Table 10: Minimum Values of CVR

Number of Raters	Minimum Value of CVR
5	0.99
6	0.99
7	0.99
8	0.78
9	0.75
10	0.62
11	0.59
12	0.56
13	0.54
14	0.51
15	0.49
20	0.42
25	0.37
30	0.33

6 Conclusion and Policy Recommendations

6.1 Conclusion

The study revealed that UBTEB examination questions were relevant. Lecturers are competent although used poor assessment methods. Passing of examination by learners' is significantly associated to; entry qualification, syllabus coverage and institute attended.

6.2 Recommendations

It recommended that the MoES should:

- I. vigorously intensify re-tooling of lecturers in pedagogical skills,
- II. equip workshops/laboratories; restock libraries; provide internet connectivity in colleges,
- III. streamline the curriculum for specialized institutions and orient stakeholders on the new curriculum,
- IV. lastly, the college administration should keenly supervise and monitor the teaching process.

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