

# Perceived Influencers of the Decline on Performance of Students in Botswana General Certificate of Secondary Education's Agriculture Examination Results

Clyde Sibanda<sup>1</sup>, Keba Hulela<sup>2</sup> & Nelson Tselaesele<sup>2</sup>

<sup>1</sup> Department of Agriculture Education, Moshupa Senior Secondary School, Moshupa, Botswana

<sup>2</sup> Department of Agricultural Economics, Education and Extension, Botswana College of Agriculture, Gaborone, Botswana

Correspondence: Keba Hulela, Botswana College of Agriculture, Private Bag 0027, Gaborone, Botswana. Tel: 267-35-5-0100. E-mail: khulela@bca.bw

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## Abstract

The purpose of the study was to investigate factors perceived to contribute to the decline of students' performance in the Botswana's General Certificate of Secondary Education (BGCSE) agriculture results. Ninety-one agriculture examiners were randomly sampled out of 100 teachers who were invited to mark the 2012 end of year examination scripts. A questionnaire was mailed by post and partly hand delivered to gather quantitative data. The SPSS software was used for statistical analysis. The results showed that majority (57%) of the agriculture teacher examiners were male, 66% were in the age range of 31-35 years old. A large proportion (66%) of them had taught for a period of 6 to 15 years. The study revealed positive perceptions of teachers on three constructs influencing the decline on the students' performance in agriculture. The study revealed that under the construct, *Students' behaviors, social and economic related factors, students attitudes towards the subject* yielded high mean ( $\bar{x}$ ) = 4.45, STD ( $\sigma$ ) = .81; on *Factors related to curriculum issues*, the study showed "interpretation of examination items" had high mean ( $\bar{x}$ ) = 4.39, STD ( $\sigma$ ) = .75 and under the construct on *Factors related to resources and infrastructure* the mean ( $\bar{x}$ ) was = 4.79, STD ( $\sigma$ ) = .53 was high on the *student teacher ratio*. The study concluded that the three constructs studied had influence towards students' performance in agriculture. However, based on interpretational correlations the results did not find any strong relationship among the demographic variables studied.

**Keywords:** agriculture examinations, declining results, perceived influencers, students' performance

## 1. Introduction

Concern about the decline in students' performance in the Botswana General Certificate of Secondary Education (BGCSE) examination results for almost all subjects has been significant in the past five years or more. Much has been said verbally, unofficially in corridors of educational institutions, and officially in meetings regarding the students' performance in schools. The informal and formal meetings, in political arena as well as in the media (newspapers, twitter, and facebook) have also talked about the declining results in Botswana's schools (Baboki Kayawe, 2012). Students' performance has shown a decline in several schools subjects while in agricultural education, the decline has become consistent at all levels of education. Table 1 shows the trend in the BGCSE results (Table 1) for the past five years. This is the current concern in agricultural education.

Table 1. BGCSE candidates with A, B, &amp; C pass % in between 2007 to 2011

Year	Candidate population	Proportions (%) of A, B & C pass
2007	12,043	60.18
2008	12,106	55.84
2009	13,299	50.95
2010	11,680	47.34
2011	11,731	40.52
Total	60,859	Ave = 50.97%

Source: Botswana Examination Council (2011)

Agricultural Education is a component of the Botswana General Certificate of Secondary Education (BGCSE) program. The subject is an important one in schools throughout for the majority of the people in rural areas of Botswana rely on agricultural activities as a source of livelihood; therefore, it was imperative to raise concern when students fail the subject. Agriculture in schools is a popular option compared to other subjects in senior secondary schools curricula and a compulsory practical subject in junior secondary schools (Hulela & Miller, 2003). As indicated by Hulela and Miller, agriculture was introduced into schools for the purpose of preparing students for diverse career opportunities; therefore student's low performance in the subject should be viewed with apprehension.

The consistent decline in students' performance in agricultural education as observed in primary schools, junior secondary and senior secondary schools could be attributed to several factors as pointed out in the reports by FAO and UNESCO (2005). The reports stated that, in some parts of the world there have been some changes in the agricultural markets, reduced government interventions, the decreased growth of the industry and services affecting the agriculture industry. This transformation has had an influence on higher education of agriculture. In Kenya, Njoroge and Orodho (2014) reported a decline in the number of students enrolling in agriculture whereas the attitudes toward the subject were found to be positive. The study further reported that instructional resources such as tools and equipment as well as land for farm demonstration were inadequate in schools.

In the Southern African region as pointed out by Wallace and Nilsson (1997) and Vandenbosch (2006) important innovations in Agricultural Education and Training (AET) programs have been made. According to Wallace (1992) such innovations included long-term training that relates to both formal and non-formal education. Unfortunately, these innovations have not been able to address the changing patterns of demand for trainees because of the "unresponsiveness to changing patterns of demand influenced by the changing roles of public and private sectors" (Wallace & Nilsson, 1997). In South Africa for example, the general performance of students in schools has mainly been affected by factors such as "lack of resources, discipline and poor morale, problems concerning the implementation policies, and inadequate parental involvement" (Legotlo, Maaga, & Sebege, 2005, p. 113).

Previous research studies by Hejazi and Omid (2006) in Iran, Waheed (2009) in Nigeria and by AAAE (2011) in the United State of America concluded that factors that influenced students' performance in agricultural education included among others those related to the school characteristics (curriculum), teacher related and resources for teaching the science of agriculture in schools. The list of factors included the child as a learner and parental guidance (Waheed, 2009), According to Darling-Hammond and Post (2000), "...teachers are important to students' success, excellent principals are critical to a school's success and to its ability to attract, retain and mobilize able teachers" (p. 128). The same sentiments were shared by Schwerdt and Wuppermann (2008) who suggested that "teachers matter for student learning and achievement" (p. 1) what remains a mystery could be the characteristics of a good quality teacher (ibid.).

According to Mayer (2002) research studies have shown that the income of parents have been found to have effect and influence on "children's cognitive test scores, behaviour problems, socio-emotional functioning, mental health, physical health, educational attainment, teenage childbearing, and labour market success in early adulthood" (p. 8). According to Mayer there is enough evidence to suggest that the income of a parent is significant in early life of a child to realize school results. The study also suggested a correlation between performance and students' characteristics which was found to be positive with "every dimension of child's well-being". Thus, careers in agricultural education as indicated by Esters and Bowen (2005) were a matter of individual students' choice. Research studies by Nonis and Hudson (2006) and Ukpong and George (2013) have also demonstrated that academic performance can also be influenced by the time students give to their studies.

According to Owens, Zinnah, Annor-Frempong and Obeng (2000) the poor performance of African national extension systems is often linked to the low educational level and dwindling motivational levels of most frontline extension personnel. Thus, implying that performance of students in agricultural education examinations at all levels become important and worth noting if the economy of a country is to rely on agriculture (Alam et al., 2009). The purpose of the study was to determine factors perceived to contribute to the decline of students' performance in the Botswana's General Certificate of Secondary School Education (BGCSE) agriculture results. The specific objectives of the study were to:

- 1) Examine the demographic characteristics of teacher markers who marked the 2012 agriculture examinations.
- 2) Describe the factors perceived to influence students' performance in agriculture BGCSE examinations.
- 3) Determine the inter-relationship between examiners characteristics and selected constructs studied.

### *1.1 Theoretical Framework*

Two theoretical frameworks guided the understanding of this research. The first theoretical framework of this study was developed from the theory of experiential learning with the assumption that the practical agriculture offered in Botswana schools involved students in keeping livestock and growing crops as well as preparing reports to add value to their understanding and achievement in class. According to Kolb, Boyatzis and Mainemelis (1999) experiential learning is whereby knowledge is created through the transformation of experience from the combination of grasping concepts which results in realistic experience hence the expectation to perform well in the subject. The four stages in Kolb theory best describes the BGCSE agriculture practical teaching component in which it takes into account the Concrete Experience (CE), Abstract Conceptualization (AC), Reflective Observation (RO), and Active Experimentation (AE) thus making the subject easy to grasp. The theory clearly postulates that the teaching of agriculture should be based on concrete experiences which should contribute positively to students' performance.

This theoretical framework is also based upon the practicality of the subject which employs hands-on and scientific practices in agricultural education as described by Edelson (1997). Authentic education is based on Dewey's theory of experiential learning and scientific investigations in the classroom (Knobloch, 2003). This, implies that students of agriculture at BGCSE level were exposed to solving real life problems in the field and laboratory experiments to understand the concepts. The principles in this theoretical framework hypothesised that learning in this manner prepares students to improved performance, high application, positive attitudes towards agriculture and careers in agriculture (Edelson, 1997).

The second theoretical framework pointed out by Agunloye (2011) and Waheed (2009) is that low performance in schools was influenced by several factors hence no one single idea takes the lead in this aspect. Agunloye (2011) identified key challenging points in school processes that result in low performance and suggested a conceptual model referred to as the Domains of School Performance (DoSP), to apply to Chronically Low-Performing Schools (CLPS) in order to assist in turning them around as depicted in Figure 1. The understanding of this concept is that performance of a child is based on several factors such as the "changing demographics, low socio-economic environment, dysfunctional student home-life, high student mobility, lack of parental support, and substance abuse" (p. 76). In addition, as stated by Leithwood, Louis, Anderson and Wahlstrom (2004) effective leadership is one of the factors that contribute to students' performance.

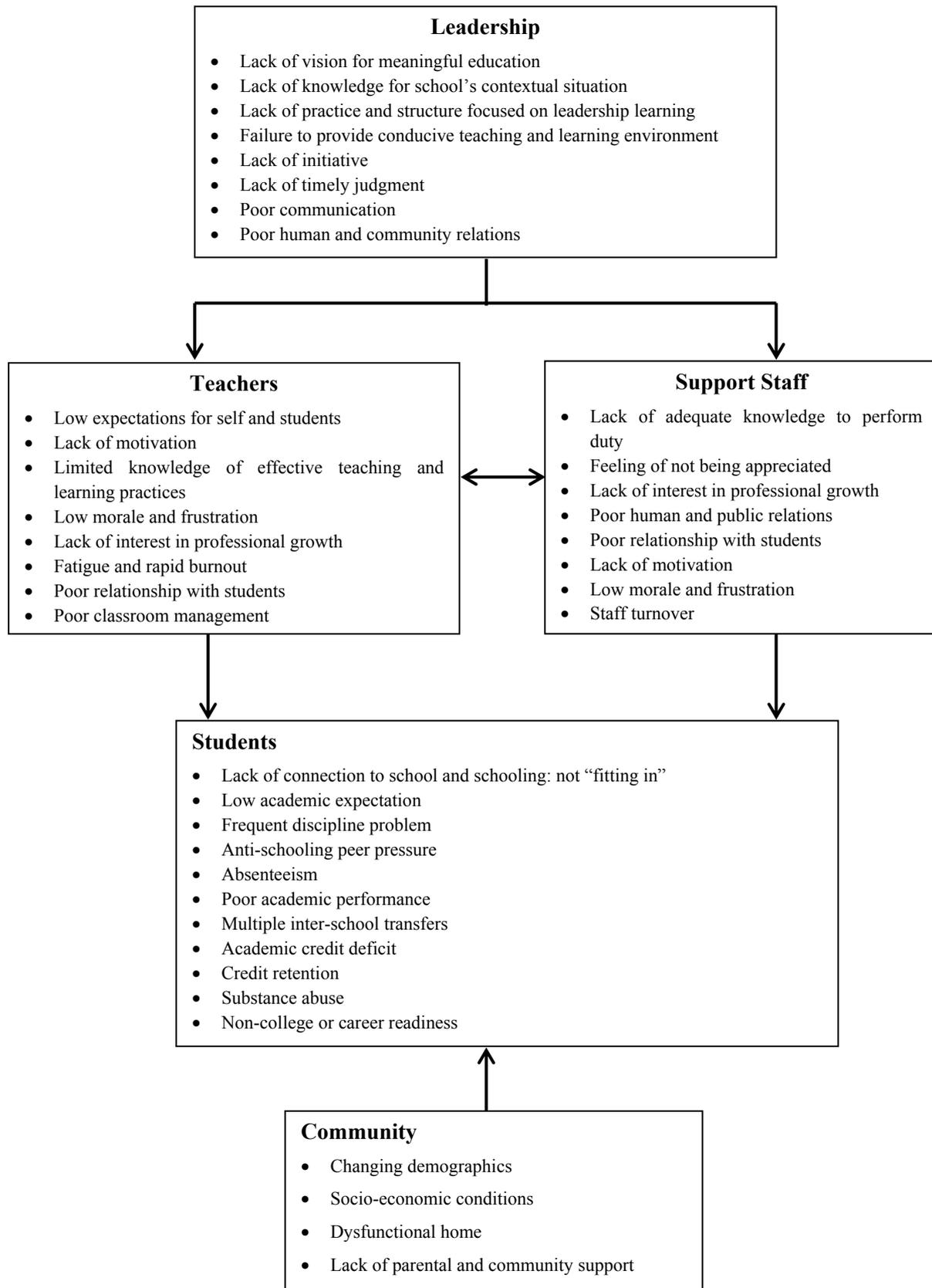


Figure 1. Diagnostic framework of factors leading to chronically low performing schools.

Source: Agunloye, 2011

## 2. Methodology

### 2.1 Design of the Study

This is a descriptive study. The purpose of the study was to describe factors perceived by teachers as influencing the performance of students in the Botswana General Certificate of Secondary Education (BGCSE) agriculture examinations in the past five years (2007-2011).

### 2.2 Population and Sampling Procedures

The study targeted one hundred agriculture teacher examiners employed by the Botswana Examination Council (BEC) in collaboration with the Ministry of Education & Skills Development (MoESD) in 2012 who marked, graded and entered students' scores in the score cards for processing. The Krejcie and Morgan (1970), formula was used to decide on the sample size from the list obtained from the Department of Secondary Education. A probability random sampling was conducted to draw a sample of 91 teachers' ensuring that every member of the teacher markers surveyed had an equal opportunity of being chosen to participate in the study (Ary et al., 2006). Each member of the examiners in the list was assigned a distinct identification number from 1 to 100. The researchers used the data editor menu of the IBM Statistical Package for Social Sciences (SPSS) version 20.0, to click on data and scrolled down to click on "Select Cases". The dialog box appeared showing 91 subjects selected out of the one hundred (100) population of teachers. This was a random sampling used to determine the sample size.

### 2.3 Data Collection Instrument

To collect data, a closed ended questionnaire was developed by the researchers guided by Ary et al. (2006) and Salkind (2002). The first part of the questionnaire requested the teacher examiners to provide their personal information. In part two, respondents were given rating scales to rate: (a) the extent to which they perceived the *students' behaviors, as well as social and economic related factors* that could influence students' performance in agriculture, (b) the extent to which the listed curriculum constructs could influence performance of students, and (c) resources and infrastructure related factors could have influence on students' performance. The statements were anchored on a likert type scale as; 1 = Strongly No Influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence; and 5 = Strong Influence for teachers to check as appropriate.

### 2.4 Validity and Reliability

To validate the instrument for collecting data, a team of experts in Agricultural Education in the Department of Agricultural Economics, Education and Extension (AEE) at Botswana College of Agriculture was used. The experts assessed the questionnaire for its content validity. The Cronbach's (alpha) values measuring the instrument reliability was computed and ranged from .65 to .81. The coefficient value was high enough to be depended upon in data collection (Tavakol & Dennick, 2011).

### 2.5 Data Collection Procedures

The agriculture examination markers were surveyed one day before the start of the 2012 BGCSE marking session. A questionnaire which had previously mailed by post and partly hand delivered was distributed when the teacher converged at marking centers to gather quantitative data. The markers were asked to respond to the questionnaire by indicating their level of agreement to the statements describing variables related to issues of curriculum, students' characteristics, teaching resources and infrastructure on students' performance in the agriculture.

### 2.6 Data Analysis

The data were analysed using Statistical Package for Social Sciences (SPSS) version 20.0 software. Descriptive statistics such as means, standard deviations and percentages were used to interpret and describe personal characteristics and factors perceived to have influence on performance. To interpret the results from the Likert type scale as described, the average means  $\leq 2.49$  denoted less influence and means  $\geq 2.50$  denoted influence. Bivariate statistics were used to express strengths of relationships between demographic characteristics and perceived variable factors. The results for each factor are presented in the subsequent discussions.

## 3. Results and Discussions

### 3.1 Objective 1: Personal Information of Teacher Markers

Table 1 shows that the majority (57%) of the agriculture teacher examiners surveyed were males. This result implies that the teaching of agriculture in secondary schools in Botswana was still dominated by male teachers. Some 66 % of respondents were aged between 36 years old and above which implied that the majority of agriculture education teachers in Botswana are older. Regarding the teaching experience, there was an equal

proportion of 33% between the category of those who taught agriculture education for a period of 6 to 10 years and 11 to 15 years respectively while 21 percent of the respondents had been working for a period of 16 to 20 years. This means that the majority of teachers surveyed had enough experience in the teaching of agriculture in schools and therefore would likely be experienced and knowledgeable with marking and grading of examinations scripts. The results also showed that four percent (4%) of the markers had a period of 21 years in the field of teaching, while nine percent (9%) had marked 16 to 20 scripts per hour, 71% were senior teachers grade one, 18% had served as heads of department and a large number (86%) held a Bachelor of Science degree in Agricultural Education. Only 9% indicated that they had Master of Science degree in Agricultural Education while an insignificant proportion (2%) held diploma in secondary education.

It can be concluded that even though the majority of teachers surveyed were found to be adequately experienced in teaching, majority had minimal experience in marking examination scripts although had the right education qualification of Bachelor's degree. Therefore, the decline in students' performance should not be associated with teachers' personal characteristics such as education level and experience in teaching alone. Research studies as shown by Hightower et al. (2011) have shown that effectiveness of a teacher in the classroom is not influenced by a single factor. Thus the decline in agriculture results could have been affected by factors like labour unrest (teachers going on national strike) a factor that was not addressed in the study but important to research on. Based on the results in Table 2, it can be concluded that the majority of the markers were generally slow in marking scripts per hour.

Table 2. Teacher marker personal characteristics

Characteristics as variables	Frequency ( <i>F</i> )	Percentages (%)
<b>GENDER</b>		
Female	39	43
Male	52	57
<b>AGE</b>		
26 to 30 years old	7	8
31 to 35 years old	24	26
36 years old and above	60	66
<b>TEACHING EXPERIENCE</b>		
Less than 5 years	8	9
6 to 10 years	30	33
11 to 15 years	30	33
16 to 20 years	19	21
21 years and above	4	4
<b>TEACHING POSITION</b>		
assistant teacher	1	1
Senior teacher grade 11	6	7
Senior teacher grade 1	65	71
Head of department	16	18
<b>QUALIFICATION</b>		
Diploma agricultural education	2	2
Bachelor of science degree Agric Education	78	86
Master of Education	8	9
Other	1	1
<b>Marking EXPERIENCE</b>		
less than 5 years	54	59
6 to 10 years	26	29
11 to 15 years	7	8
16 years and above	1	1
<b>AVERAGE SCRIPTS MARKED PER HOUR</b>		
Not more than 5 scripts	41	45
6 to 10 scripts	33	36
11 to 15 scripts	8	9

16 to 20 scripts	4	4
21 scripts and above	2	2

### 3.2 Objective 2: Factors Perceived to Influence Students' Performance in Agriculture

#### 3.2.1 Factors Related to Students' Behaviors, Social and Economic

Table 3 show the variables related to students' behaviors, social and economic related factors. The teacher respondents surveyed indicated the level at which as examiners agreed or disagreed to listed characteristics. The factors that may have influenced performance of students in the BGCSE were listed and included students' previous results, peer pressure, junior certificate English results, parental guidance, attitudes toward the subject, socio economic status of family, their discipline, parent's education, distance from home, their absenteeism, previous school, participation in class teaching materials and students' handwriting. The overall means for these 14 individual variables were computed to obtain the average means of 3.84 and standard deviation of 1.02. Among the variables, the highest mean was recorded on criterion which reads; "students' *attitude towards the subject*" ( $\bar{x} = 4.45$ ;  $\sigma = .81$ ) followed by the *Absenteeism of student* ( $\bar{x} = 4.31$ ;  $\sigma = 1.05$ ). The result recorded low statistical mean on "*distance travelled by student to school*" ( $\bar{x} = 3.33$ ;  $\sigma = 1.21$ ). Based on these results, the majority of teachers perceived the students' behaviors to be highly influential on their performance. The results were in line with Nonis and Hudson (2006) who found that majority of college students have less time to study and as a result performance is affected.

Table 3. Students' behaviors, social and economic related factors (N = 91)

Student related factors	Level of Influence	
	Mean ( $\bar{x}$ )	STD ( $\sigma$ )
Previous results	3.67	1.21
Junior certificate English result	3.60	1.23
Parental guidance	4.14	1.03
Students attitude towards the subject	4.45	.81
Socio economic status of the family	4.03	.92
Discipline	4.37	1.00
Educational level of parent	3.76	1.10
Distance travelled by student to school	3.55	1.21
Absenteeism of student	4.31	1.05
Type of school previously attended	3.41	1.11
Peer pressure	4.06	.88
Level of participation in class	3.93	.97
Teaching materials	4.20	1.01
Student's handwriting	2.57	1.13
<b>Domain</b>	<b>3.82</b>	<b>1.05</b>

#### 3.2.2 Factors Related to Curriculum Issues

The results in Table 4 presented curriculum-related factors such as interpretation of examination questions by students, content validity of items (coverage of syllabus), clarity of examination items, grading of examinations, level of English language used, scorability and availability of agriculture textbooks, practical and theory components, inquiry based, lesson planning, teachers notes and teaching aids. All of the variables scored means above the average of 2.50 on a 5 point Likert scale. The overall average means ( $\bar{x}$ ) = 3.84 with a STD ( $\sigma$ ) of 1.04. The statement on *interpretation of examination* had the highest mean of Mean ( $\bar{x}$ ) = 4.39; Standard deviation ( $\sigma$ ) = .75, followed by the statement on *availability of Textbooks* Mean ( $\bar{x}$ ) = 4.23; Standard deviation ( $\sigma$ ) = .86. Third highest mean were on recorded on "*available teaching aids*" Mean ( $\bar{x}$ ) = 4.10; Standard deviation ( $\sigma$ ) = .84, followed by *content validity* with Mean ( $\bar{x}$ ) = 4.07; Standard deviation ( $\sigma$ ) = 1.04, *clarity of examination of items* Mean ( $\bar{x}$ ) = 4.07; Standard deviation ( $\sigma$ ) = .93, and teachers notes scored a Mean ( $\bar{x}$ ) = 4.00; Standard deviation ( $\sigma$ ) = 1.11. The results confirmed that the factors related to curriculum were highly perceived to contribute to the students' performance as shown in Agunloye (2011) and Waheed (2009).

Table 4. Curriculum related factors on students achievement (N = 91)

<b>Curriculum related factors</b>	<b>Mean (<math>\bar{x}</math>)</b>	<b>STD(<math>\sigma</math>)</b>
1. Interpretation of examination	4.39	.75
2. Coverage of subject content in the syllabus	4.07	1.04
3. Clarity of examination of items	4.07	.93
4. Grading of examinations	3.70	1.16
5. Language used	3.98	.99
6. Scorability	3.47	.93
7. Theory component	3.90	1.07
8. Practical component	3.58	1.20
9. Inquiry based	3.49	1.09
10. Lesson plans	2.76	1.29
11. Teachers notes	4.00	1.11
12. Available teaching aids	4.10	.84
13. Textbooks	4.23	.86
<b>Domain</b>	<b>3.84</b>	<b>1.02</b>

Scale: 1 = Strongly no influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence.

### 3.2.3 Factors Related to Resources and Infrastructure

Teacher markers were asked to indicate the level at which they agreed or disagreed with influence of resources and infrastructure related factors on academic performance of students in the BGCSE agriculture examinations. Table 5 showed results on assessment of examiners perceptions regarding variables denoted in this study as “*factors related to resources and infrastructure*”. The results showed that examiners agreed that all the factors listed were found to have influence on students’ performance in agriculture. The results showed that the highest mean were: *student teacher ratio* Mean ( $\bar{x}$ ) = 4.79; Standard deviation ( $\sigma$ ) = .53, followed by *time management* Mean ( $\bar{x}$ ) = 4.42; Standard deviation ( $\sigma$ ) = .84, and *feedback given* with Mean ( $\bar{x}$ ) = 4.22; Standard deviation ( $\sigma$ ) = .96. The least was on “*students’ lockers*” with a Mean ( $\bar{x}$ ) = 2.67; Standard deviation ( $\sigma$ ) = 1.33. The *student teacher ratio* as viewed by examiners to be highly influential among other variables in this construct. This could be true as the study by Moyles and Robison (2000) found that the high number of students to a teachers means that students spend too much of their time waiting for the teacher’s attention resulting in insufficient guidance. This means that markers perceived highly the variable on students’ teacher ratio to have influence on student’s performance.

Table 5. Resources and infrastructure related factors on achievement (N = 91)

<b>Resources related factor</b>	<b>Level of Influence</b>	
	<b>M (<math>\bar{x}</math>)</b>	<b>STD(<math>\sigma</math>)</b>
Cleanliness of learning classroom	3.20	1.17
Sitting arrangement	3.03	1.27
Feedback given	4.22	.96
Student teacher ratio	4.79	.53
Time management	4.42	.84
Punishment given to students	3.34	1.19
Time allocated for teaching	4.06	1.15
Chalkboard	2.74	1.34
Desks available	3.38	1.29
Students lockers	2.67	1.35
Technology	3.75	1.16
<b>Domain</b>	<b>3.66</b>	<b>1.10</b>

Scale: 1 = Strongly no influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence;

### 3.3 Objective 3: Relationship between Respondents' Demographic Characteristics and Perceived Influencers

#### 3.3.1 Respondents' Demographic Characteristics and Perceived Influencers

Table 6 presented the bivariate relationship between each of the variables. According to Davis (1971) a Pearson product moment correlation coefficient of .01-.09 represented a negligible relationship; .10 to .29 represented a low relationship and .30 to .49 represented a moderate relationship and .50 to .69 represented a substantial relationship while .70 and above represented a very strong relationship. Based on Davis (1971) there was negligible relationship between age and level of education, gender and the number of scripts marked and age, position held at school, and the number of scripts marked. Furthermore, results showed negligible relationships between resources available for teaching students in schools and the level of education of teachers and the script they mark per an hour. Other variables where the results showed a negligible relationship were between the center for marking and positions held by the teacher, teachers' education level and scripts marked; between examination center conditions and age and number of scripts marked.

This means the interrelationship between and among the variables did not have effect on the students' performance in the BGCSE agriculture results. Therefore, there is no way in which the results of students in agriculture could be associated with the interrelationship of the variables studied herewith.

Results also showed that several variables had moderate positive and negative relationships with one another such as gender of markers and their age; teaching experience and gender, education level acquired and age. The teachers marking experience had a moderate relationship with teaching experience. The number of scripts teachers marked with gender, students' characteristics, and issues related to curriculum. The students characteristics also had a moderate relationship with position held, education level and curriculum issues.

A substantial positive relationships were found on variables such as teaching experience with teachers' age and teaching positions; curriculum and resources available for teaching and examination related factors. This means teacher markers perceived the students' performance in agriculture to have a substantial positive relationship with teaching experience, age of the teacher position held and curriculum taught in schools as well as resources available for teaching. Further research in this area could shed light on this.

The results did not find any strong relationship among the variables studied. Majority, ten out of twelve of the inter-correlations between variables yielded positive moderate relationships while only two yielded negative coefficient values for moderate relationships. This means majority of the substantial relationships were positive thus implying that to a certain extent students' results were influenced by the factors studied.

Table 6. Summary of bivariate inter-relationship between teacher demographic characteristics

	X <sup>1</sup>	X <sup>2</sup>	X <sup>3</sup>	X <sup>4</sup>	X <sup>5</sup>	X <sup>6</sup>	X <sup>7</sup>	X <sup>8</sup>	X <sup>9</sup>	X <sup>10</sup>	X <sup>11</sup>	X <sup>12</sup>	X <sup>13</sup>
X <sup>1</sup>	1.00												
X <sup>2</sup>	.16	1.00											
X <sup>3</sup>	.10	.67	1.00										
X <sup>4</sup>	.08	.14	.40	1.00									
X <sup>5</sup>	.07	.05	.09	.28	1.00								
X <sup>6</sup>	.10	.47	.50	.35	.27	1.00							
X <sup>7</sup>	.04	.00	.12	.03	.07	.04	1.00						
X <sup>8</sup>	.05	.09	.24	.19	.17	.36	.18	1.00					
X <sup>9</sup>	.22	.22	.09	.02	.16	.07	.23	.27	1.00				
X <sup>10</sup>	.01	.14	.36	.15	.07	.21	.02	.55	.60	1.00			
X <sup>11</sup>	.40	.12	.21	.04	.01	.17	.01	.34	.45	.65	1.00		
X <sup>12</sup>	.02	.18	.19	.11	.03	.26	.06	.26	.67	.49	.52	1.00	
X <sup>13</sup>	.03	.21	.19	.03	.03	.13	.15	.38	.47	.46	.63	.49	1.00

X<sup>1</sup> = Gender (Nominal: 1 = female, 2 = male); X<sup>2</sup> = Age (Nominal: 1 = Below 25 years old, 2 = 26-30 years old, 3 = 31-35 years old, 4 = 36 years old and above); X<sup>3</sup> = Teaching experience (Nominal: 1 = Less than 5 years, 2 = 6 to 10 years, 3 = 11 to 15 years, 4 = 16 to 20 years, 5 = 21 years and above); X<sup>4</sup> = Teaching position (Nominal: 1 = Assistant teacher, 2 = Teacher, 3 = Senior teacher grade 2, 4 = Senior teacher grade, 5 = Head of Department); X<sup>5</sup> = Level of education (Nominal: 1 = Diploma secondary education, 2 = Diploma Agricultural Education, 3 = Bachelor of Science degree (Agric education), 4 = Bachelor's degree (specify)); X<sup>6</sup> = Marking experience (Nominal: 1 = Less than 5 years, 2 = 6 to 10 years, 3 = 11 to 15 years 4 = 16 years and above); X<sup>7</sup> = No. of scripts marked (Nominal: 1 = Not more than 5 scripts, 2 = 6 to 10 scripts per hour, 3 = 11 to 15 scripts per hour, 4 = 16 to

20 scripts per hour, 5 = 21 scripts and above); X<sup>8</sup> = Student related factors (Interval: 1 = Strongly no influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence; 5 = Strong influence); X<sup>9</sup> = Curriculum related factors (Interval: 1 = Strongly no influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence; 5 = Strong influence); X<sup>10</sup> = Resources related factors (Interval: 1 = Strongly no influence; 2 = No influence; 3 = Influence; 4 = Moderate Influence; 5 = Strong influence); X<sup>11</sup> = Examination centre related factors (Interval: 1 = Strongly disagree; 2 = Disagree; 3 = slightly agree; 4 = Agree; 5 = Strongly agree); X<sup>12</sup> = Examiners related factors (Interval: 1 = Strongly disagree; 2 = Disagree; 3 = slightly agree; 4 = Agree; 5 = Strongly agree); X<sup>13</sup> = Examination marking venues related factors (Interval: 1 = Strongly disagree; 2 = Disagree; 3 = slightly agree; 4 = Agree; 5 = Strongly agree);

#### 4. Findings, Conclusions and Educational Implications

The study found that the majority (57%) of agriculture teacher examiners was male, 66% were in the age range of 31 years old and above, and a large proportion (66%) had taught for a period of 6 to 15 years. The study also revealed that the majority of the markers had marked for a period of ten years and below with 59% in the range of five years and less. Among other factors, the study found that peer pressure: availability of teaching materials; absenteeism of students, socio economic status of children's families; students' attitudes towards the subject; and parental guidance had higher means implying that they have a positive contribution to students' performance.

The study found that agriculture teacher examiners who marked the 2012 agriculture examination scripts were moderately experienced in marking, majority were males, were senior teachers Grade I and their marking was a bit slow as they marked less than ten script within one hour. The study further revealed that the majority of agriculture teacher markers agreed that students' behaviors were highly influential in the BGCSE agriculture performance. Other factors found to influence students' performance in agriculture results as revealed in the study were, curriculum related factors, resources and infrastructure for teaching. The finding were closely related to findings of Legotlo, Maaga, and Sebego (2005), Hammond and Post (2000), whose concerns were that the key stakeholders were parents, teachers, students themselves, and the leadership such as principals. The study also found that several variables had negligible to moderate positive as well as negative relationships with one another such as gender of markers and their age; teaching experience and gender, education level acquired and age. Therefore the interpretational correlations did not find strong relationship among the variables studied.

#### References

- AAAE. (2011). *National Research Agenda: American Association of Agricultural education Research priority areas for 2011-2015*. Retrieved from [http://aaaeonline.org/files/research\\_agenda/AAAE\\_National\\_Research\\_Agenda\\_\(2011-15\).pdf](http://aaaeonline.org/files/research_agenda/AAAE_National_Research_Agenda_(2011-15).pdf)
- Agunloye, O. O. (2011). Turning Around Chronically Low-Performing Schools: A Diagnostic Framework and Conceptual Model. *American International Journal of Contemporary Research*, 1(3).
- Alam, G. M., Hoque, K. E., Khalifa Md, T. B., Siraj, S. B., & Ghani, M. F. B. B. A. (2009). The role of agriculture education and training on agriculture economics and national development of Bangladesh. *African Journal of Agricultural Research*, 4(12), 1334-1350. Retrieved December, 2009, from <http://www.academicjournals.org/AJAR> ISSN 1991-637X © 2009 Academic Journals
- Baboki Kayawe Staff Writer. (2012). *BGCSE results: A sad reality*. Retrieved from <http://www.mmegi.bw/index.php?sid=1&aid=648&dir=2012/February/Monday20/>
- Darling Hammond, L., & Pst, L. (2000). Inequality in teaching and schooling: Supporting high-quality teaching and leadership in low-income schools. In D. Richard, & R. D. Kahlenberg (Eds.), *Excerpted from A Notion at Risk: Preserving Public Education as an Engine for Social Mobility*. Retrieved from <http://www.teaching-point.net/News/LDH-Post-Inequality.pdf>
- David, A., Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (1999). *Experiential Learning Theory: Previous Research and New Directions*. Retrieved from <http://www.d.umn.edu/~kgilbert/educ5165-731/Readings/experiential-learning-theory.pdf>
- Davis, J. A. (1971). *Elementary survey analysis*. Englewood, NJ: Prentice-Hall.
- Edelson, D. C. (1997). Realizing Authentic Science Learning through the Adaptation of Scientific Practice. *International Handbook of Science Education*.

- Esters, L. T., & Bowen, B. E. (2005). Factors influencing career choices of urban agricultural education students. *Journal of Agricultural Education*, 46(2), 24-35. Retrieved from <http://pubs.aged.tamu.edu/jae/pdf/vol46/46-02-24.pdf>
- FAO and International Institute for Educational Planning of UNESCO. (2005). *Reforming higher agricultural educations: The case of the school of agriculture at Monterrey Tech (ITESM)*. Food and Agricultural Organization of the United Nations.
- Hedjazi, Y., & Omid, M. (2008). Factors affecting the academic success of Agricultural students at University of Tehran, Iran. *Journal of Agricultural Science Technl*, 10, 205-214.
- Hightower, A. M., Delgado, R. C., Lloyd, S. C., Wittenstein, R., Kacy Sellers, K., & Swanson, C. B. (2011). *Improving Student Learning By Supporting Quality Teaching: Key Issues, Effective Strategies*. Editorial Projects in Education, Inc. Retrieved from [http://www.edweek.org/media/eperc\\_qualityteaching\\_12.11.pdf](http://www.edweek.org/media/eperc_qualityteaching_12.11.pdf)
- Knobloch, N. A. (2003). Is experiential learning authentic? *Journal of Agricultural Education*, 44(4), 22-34.
- Legotlo, M. W., Maaga, M. P., & Sebego, M. G. (2002). Perceptions of stakeholders on causes of poor performance in Grade 12 in a province in South Africa. *South African Journal of Education*, 22(2), 113-118.
- Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *Executive summary How leadership influences student learning: The Wallace Foundation*. Center for Applied Research and Educational Improvement. Retrieved from <http://www.wallacefoundation.org/knowledge-center/school-leadership/key-research/documents/how-leadership-influences-student-learning.pdf>
- Mayer, S. E. (2002). *The Influence of Parental Income on Children's Outcomes. Raising children in New Zealand*. Retrieved from <https://www.msd.govt.nz/documents/about-msd-and-our-work/publications-resources/research/influence-parental-income/influence-of-parental-income.pdf>
- Njoroge, K. T., & Orodho, J. O. (2014). Secondary School Student's Perception towards Agriculture Subject in Public Secondary Schools in Nairobi County, Kenya. IOSR. *Journal of Humanities And Social Science (IOSR-JHSS)*, 19(7), 30-36.
- Nonis, S. A., & Hudson, G. I. (2006). Academic Performance of College Students: Influence of Time Spent Studying and Working. *Journal of Education for Business*, 151-159.
- Nsa, S. O., Offiong, A. A., Udo, M. F., & Ikot, A. S. (2014). School Environmental variables and students' academic performance in agricultural Science. *International Journal of Business and Social Science*, 5(1).
- Schwerdt, G., & Wuppermann, A. C. (2000). *Do teaching practices influence student achievement?* Retrieved from <http://www.edge-page.net/jamb2008/Papers/TeachingPractices.pdf>
- Tavakol, M., & Dennick, R. (2001). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.
- Ukpong, D. E., & George, I. N. (2013). Length of Study-Time Behaviour and Academic Achievement of Social Studies Education Students in the University of Uyo. *International Education Studies*, 6(3).
- Vandenbosch, T. (2006). *Post-primary agricultural education and training in Sub-Saharan Africa: Adapting supply to changing demand: Global Coordinator, Farmers of the Future World Agroforestry Centre (ICRAF)*. Retrieved from [http://siteresources.worldbank.org/INTAFRREGTOPEUCATION/Resources/444659-1212165766431/Post\\_Primary\\_Agriculture\\_Education\\_Africa.pdf](http://siteresources.worldbank.org/INTAFRREGTOPEUCATION/Resources/444659-1212165766431/Post_Primary_Agriculture_Education_Africa.pdf)
- Waheed, O. O. (2009). Identifying predictors of secondary schools performance in Agricultural Science in Nigeria. *Electronic Journal of Research in Educational Psychology*, 7(3), 1369-1378.
- Wallace, I. (n.d.). *Agricultural restructuring in southern Africa*. Paper presented at International Symposium held in Swakopmund, Namibia.

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