SUPERVISORY ROLE OF PRINCIPALS AND QUALITY ASSURANCE IN SECONDARY SCHOOL SCIENCE EDUCATION PROGRAMME

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Abstract
In this study, the author assessed teachers' perception of principals' supervisory role in quality assurance in secondary school science education programme. The study was based on the assumption that if school principals properly supervise teaching and learning activities in science classes then teachers will teach very well and students' learning outcomes will improve. One hundred and seventy-nine science teachers who were randomly selected from 58 secondary schools in Ibadan City, Oyo State, Nigeria participated in the study. One valid and reliable questionnaire titled "Teachers Perception of Principals Supervisory Role (TPoPSR)" was used to gather data. Three research questions were answered. Data were analysed by using mean, standard deviation, frequency counts and percentages. For the interpretation of the results, a bench mark of 2.5 was set for the mean values of the participants' responses to each of the 19 items contained in Part A and Part B of TPoPSR. On the basis of bench mark set, the teachers were of the opinion that principals were performing their role in the area of classroom inspection. Results also show that the teachers expected their principals to do more in the area of checking teacher's note of lesson, teacher's mark book and students' notebook. More importantly, results show that teachers do not expect their principals to make informal visits to their classroom and evaluate teachers' content knowledge. The results of the study have brought to focus the level at which secondary school principals perform their supervisory role. The results of this study show that teachers expected their principals to play more supervisory role than they do at present, especially in the area of monitoring teachers' and students' written work.

Keywords: Supervision; Principals; Secondary Schools; Science education; Teachers.

Introduction

No doubt, developing countries, especially in the Sub-Saharan Africa such as Nigeria, Ghana and Kenya, are struggling to catch up with developed nations such as United Kingdom, United States of America, Japan and China among others, in the areas of technology, engineering and sciences. However, for developing countries to catch up with developed countries their science education programme (such as Biology, Chemistry, and Physics) must be thoroughly improved upon. That is, efforts must be made to attract more students into the sciences subjects and also improve upon their level of achievement in both public and school-based examinations. More importantly, teaching and learning of the science subjects, such as Biology, Physics and Chemistry, must be structured in such a way that students will be able to transfer knowledge gained in the classroom to real life situations to solve problems in the society.

One of the ways by which science education programme can be improved upon in secondary schools is through efficient and effective supervision of instructional activities. Although teachers are responsible for teaching and learning activities in different classrooms, according to Miller, Murnane and Willet (2007), the overall supervision for improvement of instructional activities is one of the functions of the school principal. The principal is the highest-ranking administrator in secondary school and he or she is always held responsible for what other people in his or her school do, besides what he or she does. A principal is never expected to say of something that had gone or was wrong “Ah, but I didn’t do that, Mr. A or Mrs. C did that” and then expect to be left out of the argument. A principal cannot say of anything in his or her school “I know it’s not what it should be, but it is other members of the staff who do this, so I am not responsible, I am not concerned”.

The principal is responsible to and expected to report to the coordinating agencies such as the State Ministry of Education (MoE), the Post Primary School Board (PPSB), the Zonal and Local Inspectorate of Education (ZIE/LIE), on matters relating to his or her school. More importantly, he or she is responsible for everything that happens in his or her school as may be demanded by the parents, the media, and the public, both for the general standard and condition of the school and for the individual details that makes it up. If someone else fails to do

what they should do in the school, it is the principal's responsibility to be aware that this is happening and to do something to change the situation, whether the deficiency is in a teacher who never marks his or her written work, or fails to attend and teaches his or her lesson, or an accounts clerk who misappropriate school funds, or even an officer of MoE or LIE who does not act for weeks, or for months, on requests for issues such as posting of qualified teachers to school, repairs of dilapidated buildings and supplies of science equipment for practical activities in the school laboratories.

Generally, as managers, principals are responsible for financial operations, building maintenance, student scheduling, personnel, public relations, school policy regarding discipline, coordination of the instructional program, and other overall school matters. However, in this 21st century when schools are being held to account for the performance of their students in public and school based-examinations and quality of education in general, the role of the principal is changing from being just a school manager to school instructional and reform leader. According to Sergiovani (2001) and Ubben, Hughes and Norris (2001), during the latter part of the twentieth century, as schools began to be held more accountable for the performance of their students in national and state assessments, the duties and responsibilities of principals have changed. Principals became more responsible for teaching and learning in their schools. In particular, their duty to monitor instruction increased along with their responsibility to help teachers improve their teaching.

As observed by Sweeney (1982), the school principal is expected to be directly involved in (a) maintaining conducive atmosphere for teaching and learning activities in the school (b) coordinating teaching and learning programmes in the school (c) assigning subjects to teachers according to their qualifications and experiences (d) monitoring teaching and learning activities in the classrooms (e) boosting the morale of teachers in the school (f) ensuring even distribution of resources to teachers to engender quality teaching and learning activities. According to Zobaida (2008), principals who are able to perform these functions very well are usually rated as being efficient and effective. More importantly, according to Ariyo (2014) and Ayeni (2012), principals who are able to perform these functions are likely to ensure that a high quality of secondary school

education is being offered to secondary school students. The extent to which principals were able to perform these functions, as perceived by science teachers, was one of the foci of this study.

The term quality connotes standard of excellence. It implies conformity to a given level of excellence. As defined by the Oxford Advanced Learner's Dictionary (Hornby, 1997), quality assurance refers to "the practice of managing the way goods are produced or services are provided to make sure they are kept at a high standard". To Raouf (2008), quality assurance in education is the process of ensuring continuous improvement in all aspects of education business in an institution of learning to satisfy the needs and expectations of the institution's customers (society). According to Ayeni (2012), this approach is built around the premise that every step of the process of a service and of an operation has room for improvement and it is based on Deming's (1966) cycle of continuous improvement.

Deming's (1966) cycle of continuous improvement is a process that centers on Plan, Do, Check and Act (PDCA) cyclic movement. Temponi (2005) explained that this process enables the principal to regularly monitor, assess and evaluate the resource inputs, instructional process and outputs by identifying the key elements/aspects that need improvement and ways of addressing these, implementing the plan, analyzing the result to ensure that significant agreement exists between the original goals and what is actually achieved, and acting on the plan full scale by conducting further work. Because schools were established to provide services to the society, therefore quality assurance should be the concern of every principal worth its salt. A efficient Principal should be concerned about the quality of teaching and learning activities in the classroom.

The principal should be able to provide answers to questions such as: Are teachers teaching what they are supposed to? Do students listen and understand the content of the lesson? Do teachers attend their lessons promptly? What is the level of achievement of students in science classes in both school based and public examinations? Can the teaching method being adopted by the teacher leads to enhanced learning opportunities for the students? How much knowledge do students gained from a teaching learning activities in a particular subject? Can the graduates of this school compete favourably with their colleagues who graduate from other schools or in other climes? Can

graduates from our schools transfer the knowledge gained in the science classroom to real life experiences and use such knowledge to solve problems in the society?

Answers to questions posed in the preceding paragraph determine the effectiveness of the principal. In effect, whilst there are regulatory and coordinating agencies such as MoE, PPSB or SMB and professional bodies such as Nigeria Union of Teachers (NUT) and All Nigeria Conference of Principals of Secondary Schools (ANCOPSS) which have the mandate to establish and maintain academic standards in all secondary schools, each principal is expected to have his or her own self-validation tests as part of ensuring quality in his or her school.

Studies (such as Tyagi, 2009, 2011; Hallinger &Heck, 1996) have shown that supervision is a mechanism for improving teaching and learning activities in school and for maintaining the quality of the products of the school system. It is a way of empowering teachers and facilitating students learning outcomes. Students tend to develop more interest in school when the school environment becomes more conducive as a result of principals' supervisory roles. Consequently students' achievement in school subjects becomes improved. Hallinger and Heck (1996) have shown that supervision of instruction by principal tends to have influence on students' achievement. Specifically, Hallinger and Heck (1996) in their study found that principal supervisory roles helped in creating a collaborative working environment for the major stakeholders in the school, that is, the principal, the teachers and the students. No doubt, creating a collaborative environment provides teachers the opportunity to grow and develop, encourages students to learn the content of the subjects meaningfully and consequently develop positive attitude to schooling and school.

In Nigeria, it is true that some studies (such as Ayeni & Akinola, 2008; Ayeni, 2012) had looked at the principals' roles in quality assurance, however, not much emphasis had been placed on teacher' perception on what specific roles principals should play to maintain the quality of teaching and learning of science subjects in secondary school. Moreover not much work had been done in the area of comparing the actual roles the principals are playing with what roles the teachers expect them to play. Although a study which is somewhat similar to the present study was conducted by Ariyo in 2014, the focus was in the

area of Mathematics. The scope of Ariyo (2014) was therefore somewhat narrow. According to Blasé and Blasé (2004), there is paucity of research and empirical facts on how instructional supervision is actually practiced in schools as well as how teachers are actually affected by such supervision. More importantly few studies had been carried out in the area of sampling teachers' perception on how supervision should be carried out or what principals should focus on in the course of supervision.

Therefore in this study, the author examined teachers' perception of the principals roles in maintaining quality of science education in secondary schools. In addition, the actual roles the principals are playing are compared with what the teachers really expect them to play. The results of the study have brought to focus the level at which secondary school principals perform their supervisory roles. The results of this study show that teachers expect their principals to play more supervisory roles than they do at present, especially in the area of monitoring students' written work.

Research Questions

Specifically, in order to give direction to this study three research questions were answered. They were the following:

1. How often do principals play supervisory role in the school as perceived by teachers?
2. How often do teachers expect principals to play supervisory role in order to ensure quality of teaching and learning of science subjects?
3. (a) What are the aspects of supervision role that teachers want principals to focus on in order to ensure quality of teaching and learning of science subjects? And (b) What are the aspects of supervision of instruction that teachers do not want principals to focus on in order to ensure quality of teaching and learning of science subjects?

Methods

Participants

One hundred and seventy-nine science teachers who were randomly selected from 58 public senior secondary schools in Ibadan City, Oyo

State, Nigeria, participated in the study. In each of the sampled schools, all the available physics, chemistry and biology teachers were sampled. Among these teachers were 95 males and 84 females. Their ages ranged between 31 years and 47 years. Their years of teaching experience ranged between 10 and 25 years. Thirty-one percent of the teachers hold first degree in Physics/Education, 29% holds first degree in Biology/Education, twenty percent holds first degree in Chemistry/Education, 18% holds first degree in the field of Engineering, while two percent holds Higher National Diploma plus Postgraduate diploma in education.

Materials

For the study one reliable and validated questionnaire titled "Teachers' Perception of Principals Supervisory Role" (TPoPSR) was used to collect data. The TPoSR was adapted from Ariyo (2014). To suit the purpose of this study, the response format was restructured and some items were re-written. The TPoPSR had two sections (Section One and Section Two) and two parts (Part A and Part B).

Section one was the introductory while section two was on demographics. Section two sought information from the teachers on age, sex, years of experience and highest qualification obtained. Part A contained items which sought the perception of the teachers on how often principals carry out supervisory role in the school. In this part there were 19 items measuring the supervisory role of the principal. Part B also contained 19 items which sought the responses of the teachers on how often they expect principals to perform their supervisory role. The responses of the teachers in Part A were placed on 4-point Likert scale of:

(a) Very Often (VO) – If the principal had performed this role at least five times in the last 30 days.
(b) Often (OF) – If the principal had performed this role at least three times in the last 30 days.
(c) Rarely (RE) – If the principal had performed this role at least one time in the last 30 days
(d) Not Applicable (NA) – If the principal had not performed this role at all in the last 30 days.

The main question was: How often does your principal perform this role in your school? For scoring, VO attracted 4 points; OF attracted 3 points; RE attracted 2 points and NA attracted 1 point.

The responses of the teachers in Part B were also placed on 4-point Likert scale of:

(a) Very Often (VO) – If the principal had performed this role at least five times in the last 30 days.
(b) Often (OF) – If the principal had performed this role at least three times in the last 30 days.
(c) Rarely (RE) – If the principal had performed this role at least one time in the last 30 days
(d) Not Applicable (NA) – If the principal had not performed this role at all in the last 30 days.

The main question was: How often do you expect your principal to perform this role in your school?

The reliability index of the TPoPSR was determined by using Cronbach Alpha. Part A was 0.81 and Part B was 0.75

Data Collection Procedure

The questionnaire was administered to the 179 sampled teachers by five master's degree students in the Institute of Education, University of Ibadan. The teachers were given two days to respond to the items.

Data Analysis

The data gathered were analysed using frequency counts and percentages as well as mean and standard deviation.

Results

Results are hereby presented in the order in which the research questions and the hypotheses were stated.

Research Question 1: How often do principals play supervisory roles in the school as perceived by teachers?

Table 1 presents the results of the analysis of the responses of the 179 teachers to section two of the TPoPSR.

Table 1: Perception of Teachers on Principals' Supervisory Roles

No	***Statement: How often does your principal engage in the following supervisory activities***	**Responses**				$\bar{X}$	SD
		VO	OF	RE	NA		
1.	Makes informal visits to classes.	31 (17.3)	70 (39.1)	60 (33.5)	18 (10.1)	2.64	0.72
2.	Observes teaching and learning in classes.	57 (31.8)	86 (48.0)	29 (16.2)	7 (3.9)	3.08	0.69
3.	Conferences with teachers to plan for lesson observation.	57 (31.8)	73 (40.8)	37 (20.7)	12 (6.7)	2.98	0.60
4.	Provides objective feedback about classroom observations.	60 (33.5)	79 (44.1)	32 (17.9)	8 (4.5)	3.07	0.67
5.	Praises teachers for specific teaching behavior.	76 (42.5)	72 (40.2)	26 (14.5)	5 (2.8)	3.22	0.78
6.	Ensures that teachers have adequate teaching-learning materials to teach.	79 (44.1)	69 (38.5)	27 (15.1)	4 (2.3)	3.25	0.80
7.	Suggests to teachers on how to improving teaching.	70 (39.1)	75 (41.9)	28 (15.6)	6 (3.4)	3.17	0.73
8.	Inspects teachers instructional practices to correct errors	52 (29.1)	79 (44.1)	35 (19.6)	11 (6.2)	2.94	0.61
9.	Helps teachers find solutions to problems they encounter in their instructional practices	70 (39.1)	67 (37.4)	31 (17.3)	11 (6.2)	3.10	0.69
10.	Evaluates teachers content knowledge	74 (41.3)	74 (41.3)	26 (14.5)	5 (2.8)	3.21	0.77
11.	Evaluates teachers' instructional practice	55 (30.7)	93 (52.0)	25 (14.0)	6 (3.4)	3.10	0.73
12.	Ensures that teachers make good use of instructional time	97 (54.2)	48 (26.8)	29 (16.2)	5 (2.8)	3.32	0.95
13.	Engages teachers in mutual dialogue about	84 (46.9)	70 (39.1)	21 (11.7)	4 (2.2)	3.31	0.86

	ways to improve teaching						
14.	Offers useful suggestions to improve instructional practices	81 (45.3)	75 (41.9)	21 (11.7)	2 (1.2)	3.31	0.85
15.	Checks teachers note of lesson	10 (5.6)	10 (5.6)	85 (47.5)	74 (41.3)	1.81	0.77
16.	Checks teacher mark book	18 (10.1)	34 (19.0)	78 (43.6)	49 (27.4)	2.11	0.61
17.	Checks students physics notebook	13 (7.3)	15 (8.4)	88 (49.2)	63 (35.2)	2.04	0.73
18.	Checks teachers attendance in class	71 (39.7)	77 (43.0)	26 (14.5)	5 (2.8)	3.20	0.76
19.	Makes formal visits to Physics Classes	55 (30.7)	91 (50.8)	24 (13.4)	9 (5.1)	3.07	0.72

Note: Number in parenthesis represents percentages

As stated in the earlier section, mean and standard as well as frequency and percentages were used to analyse the data. For the explanation and interpretation of the results of the data analysis, a bench mark was set for the mean value. For each item in table 1, the mid-point of the scale is 2.5, therefore for the bench mark, 2.5 points was adopted. This implies that any item whose mean value is greater than 2.5, the teachers were of the opinion that principals often carried out this supervisory role. The larger than 2.5 the mean value is, the more often this role was being performed by the principals, as perceived by the teachers. On the other hand when the mean value is less than 2.5, it implies that the principals less often carried out this role.

Using this bench mark, it is evident that teachers were of the opinion that principals often make informal visits to classes, observe teaching and learning activities in classes, conferences with teachers, provides objective feedback about classroom observations, praises teachers for specific teaching behavior, ensures that teachers have adequate teaching-learning materials to teach, suggests to teachers on how to improve their teaching, inspects teachers instructional practices to correct errors, helps teachers to find solutions to problems they encounter in their instructional practices, evaluates teachers content knowledge, evaluates teachers' instructional practice, engages teachers in mutual dialogue about ways to improve teaching, offer useful

suggestions to improve instructional practices and makes formal visits to classes.

From table 1, item 12 (mean value of 3.32), item 13 (mean value of 3.31) and item 14 (mean value of 3.31) were rated very high by the teachers. For example, for item 12 the teachers were of the opinion that their principal "ensure that teachers make good use of instructional time".

The high rating becomes more evident when the percentages to the response formats of VO and OF were merged. For example for item 12, when response format of VO (54.2%) and OF (26.8%) were merged, the value was 81.0%. This implies that about 81% of the teachers were of the opinion that their principals often "ensure that teachers make good use of instructional time". Similarly for item 13, when the response formats of VO (46.9%) and OF (39.1%) were merged, the value was 86.0%. This implies that about 86.0% of the teachers were of the opinion that their principals often "engage teachers in mutual dialogue about ways to improve teaching". The same interpretation and explanation goes for all items whose values are greater than the mid-point value of 2.5.

On the other hand, the teachers were of the opinion that principals were not performing their roles in the area of supervision of teachers' and students' workbook. For example in item 15 –"checks teachers note of lesson", the mean value is 1.81 which is far less than the bench mark of 2.5. Merging the response format of VO (5.6%) and OF (5.6%), it is clear that very few (that is 11.2%) of the teachers were of the opinion that principals were performing this role while the majority of the teachers (89.8%) were of the opinion that principals were not performing this role. In item 16 –"checks teacher mark book", the mean value is 2.11 which is far less than the bench mark of 2.5. Merging the response format of VO (10.1%) and OF (19.0%), it is clear that very few (that is 29.1%) of the teachers were of the opinion that principals were performing this role while the majority of the teachers (70.9%) were of the opinion that principals were not performing this role.

In item 17 –"checks students physics notebook", the mean value is 2.04 which is far less than the bench mark of 2.5. Merging the response format of VO (7.3%) and OF (8.4%), it is clear that very few (that is 15.7%) of the teachers were of the opinion that principals were

performing this role while the majority of the teachers (84.3%) were of the opinion that principals were not performing this role.

Research Question Two: How often do teachers expect their principals to play supervisory role in order to ensure quality of teaching and learning of science subjects?

Table 2 presents the results of the analysis of the responses of the 179 teachers to PART two of the TPoPSR.

Table 2: Teachers Expectation on Principals' Supervisory Roles

No	***Statement: How often do you expect your principal to engage in the following supervisory activities?***	**Responses**				$\bar{X}$	SD
		VO	OF	RE	NA		
1.	Makes informal visits to classes.	7 (3.9)	9 (5.0)	124 (69.3)	39 (21.8)	1.91	0.31
2.	Observes teaching and learning in classes.	57 (31.8)	68 (48.0)	29 (16.2)	7 (3.9)	3.08	0.19
3.	Conferences with teachers to plan for lesson observation.	78 (43.6)	73 (38.0)	16 (8.9)	17 (9.5)	3.16	0.18
4.	Provides objective feedback about classroom observations.	87 (48.6)	59 (33.0)	14 (7.8)	19 (10.6)	3.20	0.19
5.	Praises teachers for specific teaching behavior.	76 (42.5)	72 (40.2)	26 (14.5)	5 (2.8)	3.22	0.19
6.	Ensures that teachers have adequate teaching-learning materials to teach.	60 (33.5)	69 (38.5)	27 (15.1)	23 (12.8)	2.93	0.13
7.	Suggests to teachers on how to improving teaching.	70 (39.1)	75 (41.9)	28 (15.6)	6 (3.4)	3.17	0.19
8.	Inspects teachers instructional practices to correct errors	69 (38.5)	79 (44.1)	15 (8.4)	16 (8.9)	3.12	0.19

9.	Helps teachers find solutions to problems they encounter in their instructional practices	70 (39.1)	72 (40.2)	21 (11.7)	16 (8.9)	3.09	0.17
10.	Evaluates teachers content knowledge	18 (10.1)	14 (7.8)	59 (33.0)	88 (49.2)	1.79	0.17
11.	Evaluates teachers' instructional practice	30 (16.8)	24 (13.4)	65 (36.3)	60 (33.5)	2.13	0.12
12.	Ensures that teachers make good use of instructional time	75 (41.9)	81 (45.3)	19 (10.6)	5 (2.2)	3.27	0.22
13.	Engages teachers in mutual dialogue about ways to improve teaching	90 (50.3)	70 (39.1)	13 (7.3)	6 (3.4)	3.36	0.23
14.	Offers useful suggestions to improve instructional practices	88 (49.2)	75 (41.9)	16 (8.9)	- (0.0)	3.40	0.24
15.	Checks teachers note of lesson	89 (49.7)	70 (39.1)	14 (7.8)	6 (3.4)	3.35	0.23
16.	Checks teachers mark book	91 (50.8)	61 (34.1)	9 (5.0)	18 (10.1)	3.26	0.21
17.	Checks students physics notebook	80 (44.7)	70 (39.1)	18 (10.1)	11 (6.1)	3.22	0.20
18.	Checks teachers attendance in class	60 (33.5)	81 (45.3)	31 (17.3)	7 (3.9)	3.08	0.18
19.	Makes formal visits to Physics Classes	50 (27.9)	57 (31.8)	61 (34.1)	11 (6.1)	2.82	0.13

Note: Number in parenthesis represents standard deviation;

As explained in the preceding section, for the explanation and interpretation of the results of data analysis, a bench mark was set for the mean value. For each item in the table, the mid-point of the scale which is 2.5 was also adopted as the bench mark. This implies that in any item whose mean value is greater than 2.5 the teachers expected their principals to often carry out this supervisory activity. The larger than 2.5 the mean value is, the more often the teachers expected their

principal to engage in this activity. On the other hand when the mean value is less than 2.5, it implies that the teachers were of the opinion that their principals should not frequently engage in such activities.

Using this bench mark, it is evident that majority of the teachers expect their principals to often make formal visits to classes and observe teaching and learning activities in classes. The role which had highest mean value is item 14 (mean value =3.40). This implies that majority of the teachers expect their principals to offer useful suggestions to improve instructional practices. Also the teachers expected their principals to check teachers note, check teacher mark book, check, students' physics note books, checks teachers attendance in class, help teachers find solutions to problems they encounter in their instructional practices, ensures that teachers have adequate teaching-learning materials and observe teaching learning activities in the classroom.

The high rating of this response becomes more evident when the percentages of responses on VO and OF were merged. For example for item 14, when response format of VO (49.2%) and OF (41.9%) were merged, the value was 91.1%. This implies that about 91% of the teachers expected their principals to often "offer useful suggestions to improve instructional practices".

Similarly for item 13, when the response formats of VO (50.3%) and OF (39.1%) were merged, the value was 89.4%. This implies that about 89% of the teachers expected their principals to often "engage teachers in mutual dialogue about ways to improve teaching". The same interpretation and explanation goes for all items whose values are greater than the mid-point value of 2.5.

On the other hand, most of the teachers did not expect their principals to make informal visits to their classes (item 1). For example in item 1 –"makes informal visits to physics classes"; the mean value is 1.91 which is far less than the bench mark of 2.5. Merging the response format of VO (3.9%) and OF (5.0%), it is clear that very few (that is 8.9%) of the teachers expected principals to make informal visits to their classes while the majority of the teachers (91.1%) did not expect their principals to make informal visits to their physics classes. In item 11 –"evaluates teachers' content knowledge", the mean value is 1.79 which is far less than the bench mark of 2.5. Merging the response formats of VO (10.1%) and OF (7.8.0%), it is clear that very few (that is

17.9%) of the teachers expected their principals to evaluate teachers content knowledge while the majority of the teachers (82.1%) did not expect their principals to engage in such role.

Research Question Three: (a) What are the aspects of supervision role that teachers want principals to focus on in order to ensure quality of teaching and learning of science subjects? And (b) What are the aspects of supervision of instruction that teachers do not want principals to focus on in order to ensure quality of teaching and learning of science subjects?

Table 3 presents the items contained in Part A and Part B of the TPoPSR, mean values, standard deviation of the mean for each item and the absolute mean difference /d/ (that is the difference between the means) for each item.

Table 3: Comparison of Teachers' Response on Principals' Supervisory Roles

No.	Statement	$\bar{X}_{WTO}$	$\bar{X}_{WTE}$	Diff /d/
1.	Makes informal visits to Physics Classes.	2.64(0.36)	1.91(0.31)	0.73*
2.	Observes teaching and learning in Physics Classes.	3.08(0.35)	3.08(0.19)	0.00^{ns}
3.	Conferences with teachers to plan for lesson observation.	2.98(0.30)	3.16(0.18)	0.18^{ns}
4.	Provides objective feedback about classroom observations.	3.07(0.34)	3.20(0.19)	0.13^{ns}
5.	Praises teachers for specific teaching behavior.	3.22(0.39)	3.22(0.19)	0.00^{ns}
6.	Ensures that teachers have adequate teaching-learning materials to teach.	3.25(0.40)	2.93(0.13)	0.32^{ns}
7.	Suggests to teachers on how to improving teaching.	3.17(0.37)	3.17(0.19)	0.00^{ns}
8.	Inspects teachers instructional practices to correct errors	2.94(0.31)	3.12(0.19)	0.18^{ns}
9.	Helps teachers find solutions to	3.10(0.35)	3.09(0.17)	0.01

	problems they encounter in their instructional practices			ns
10.	Evaluates teachers content knowledge	3.21(0.39)	1.79(0.17)	1.42*
11.	Evaluates teachers' instructional practice	3.10(0.37)	2.13(0.12)	0.97*
12.	Ensures that teachers make good use of instructional time	3.32(0.48)	3.27(0.22)	0.05 ns
13.	Engages teachers in mutual dialogue about ways to improve teaching	3.31(0.43)	3.36(0.23)	0.05 ns
14.	Offers useful suggestions to improve instructional practices	3.31(0.43)	3.40(0.24)	0.07 ns
15.	Checks teachers note of lesson	1.81(0.39)	3.35(0.23)	1.54*
16.	Checks teachers mark book	2.11(0.31)	3.26(0.21)	1.15*
17.	Checks students science notebook	2.04(0.37)	3.22(0.20)	1.18*
18.	Checks teachers attendance in class	3.20(0.38)	3.08(0.18)	0.12ns
19.	Makes formal visits to classes	3.07(0.36)	2.82(0.13)	0.25ns

Note

$\bar{X}_{WTO}$ = Mean value of items measuring teachers' perception of principal's supervisory roles as being played

$\bar{X}_{WTE}$ = Mean value of items measuring supervisory roles that teachers' expect from their Principals;

Number in parenthesis represents standard deviation;
ns absolute mean difference /d/ is not important;
* absolute mean difference /d/ is important.

To determine the supervisory activities which teachers expect and those that teachers do not expect from their principals we shall examine the importance of the absolute mean differences between the supervisory activities which the principals often engage in, as perceived by the teachers and supervisory activities which the teachers expect

principals to engage and not to engage in. For the absolute mean difference to be considered important, its value must be greater than 0.50 and more importantly, at least, one of the two mean values must be equal or greater than 2.5.

On the basis of these criteria, from table 3 it is evident that there were significant differences in items 1, 10, 11, 15, 16, and 17 while there were no significant differences in items 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14, 18, and 19.

Table 3 shows that, on the basis of bench mark set, science teachers do not expect their principals to (a) make informal visits to their classroom; (b) evaluate teachers' content knowledge, (c) evaluate teachers' instructional practices. On the other hand, the teachers expected their principals to do more in the aspects of (a) checking teacher's note of lesson (b) checking teacher's mark book (c) checking students' notebook.

Discussion and Recommendation

In this study, the perception of science teachers on how often principals perfom their supervisory role was investigated. In addition, teachers were asked to rate the extent to which they expect their principals to perform such role. Generally, teachers were of the opinion that their principals often performed their supervisory role in such areas as observing the teaching and learning activities in the classroom, providing objective feedback about classroom observations, praising teachers for specific teaching behavior that can promote learning, providing adequate teaching-learning materials, engaging teachers in mutual dialogue about ways to improve instructional practices and offering useful suggestions to improve instructional practices. These findings were in agreement with that of Ariyo (2014).

However, from the results it was observed that teachers were of the opinion that principals were not performing such supervisory roles as checking teachers' note of lesson, checking teacher's mark book and checking students note book. These are some of the aspects that teachers had expected their principals to focus on. That principals did not often perform these activities may be as a result of the fact that they have delegated them to vice principals and the head, department of sciences. No doubt there are many management functions that principals are supposed to perform, such as attending meetings of

ANCOPPS, attending meetings at the MoE or PPSB, meeting with the executive of Parents Teachers Association or individual parents, nevertheless, principals should pay attention to aspects of checking teachers note of lesson and teachers mark book. More importantly, principal should endeavour to check students' note book. This is very important in that through checking of the note books of the students the principal will be able to know the quality of work that the teachers had done, the amount of home work the teacher had given to the students and the frequency at which the teacher marked the home assignment and provided corrective feedback.

The importance of note taking by the students in the classroom cannot be overemphasized. Note taking directs students' attention to the concept the teacher is teaching. According to Sprinthal, Sprinhall and Oja, (1998), besides serving as a source of reference for the students after the lesson, note taking and note writing assists the students to develop their writing skills. As a result of this, teachers should encourage students to write notes in the class and principals should make it as a point of duty, at least once in two weeks, to always randomly sample quite a good number of students' note books, check the content of the notebooks and offer suggestions to teachers and students on how to improve instructions. This is one way of ensuring quality of instructions and students' learning in the sciences in particular and in other school subjects in general.

In the school system the raw materials which the school processes are the students and the products are the graduates after spending the prescribed number of years in the school system. Supervision of instruction should therefore not start and end with what teachers are doing in the classroom but also how what they are doing affect the raw materials. Principals should not be too busy to the extent of neglecting the students but show more commitment and enthusiasm to them. In fact the school principal should create time to check students' notebook and teachers' marks book. These two statutory records indicate the quality and amount of teaching and learning activities in the school. If Principals show lack of commitment to these major aspects of their supervisory roles, then the assertion of Zubaida (2008) that quality assurance in education is being affected by many problems especially lack of proper monitoring and evaluation of students' learning processes and outcomes, holds true.

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