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## Determining Methods used in Teaching Geography in Secondary Schools in Rongo District, Kenya

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### Abstract

This article dealt with methods of teaching Geography in Kenya but also the world over. The importance of Geography in secondary school curriculum cannot be overemphasized. Improving the performance of Geography education is a great societal need in Kenya not only for industrialization of the country as contained in the vision 2030 but also for ensuring food security in the country through practices like land reclamation and irrigation farming. The objective of this article was; to find out the teaching methods used by various Geography teachers in secondary schools in Rongo district. The research question was: Which are the teaching methods used by secondary school Geography teachers in Rongo district? This study was guided by the Skinner's (1971) theory of Operant Conditioning which states that learning is based on consequences-reward. The respondent's behaviour (R) is under the control of stimulus (S). It is therefore a process through which organisms learn to repeat behaviour that yields positive outcomes. The study adopted the descriptive survey design and targeted students taking Geography in the district. Female students were 302 while male students were 704 in secondary schools in Rongo District, Kenya. The study sample consisted of 308 students and 11 Geography teachers drawn from 11 secondary schools in Rongo district. The eleven schools is equivalent to thirty two per cent of secondary schools in Rongo district, which is considered statistically representative enough. Stratified random sampling was used to choose the schools to be included in the sample by using divisions as units of study. In order to identify the schools to be used from each division, simple random sampling was used. Purposive sampling was used to ensure that there is gender equity. The researcher used a questionnaire, observation and document content analysis as the main instruments for data collection. Data was collected using closed and open ended questionnaires. The questionnaires were pre-tested by being administered to 30 respondents from two schools which were not included in the study. The scores obtained from the first and second tests were 0.76 and 0.77 respectively. The descriptive statistics including percentages mean and frequency tables were used to analyse the data. Data was also analysed using the Statistical Package for Social Sciences (SPSS) version 15.0 computer programme. The results of the study indicated that the use of question and answer method by teachers is at 85.3% while

students' preference for it is at 48%. The use of field work by teachers is at 56.2% while the students' preference for it is at 75%. The study recommends that teachers to use the teaching methods which are preferred by students and are recommended by the syllabus.

**Keywords:** Determining, Methods, Teaching, Geography, Secondary, Schools, Kenya

### **Introduction**

Education is fundamental in the development of human beings and has been viewed principally as a fundamental human right (Abagi, 1999; Kyalo et al., 2006). Worldwide, education is viewed as a prominent factor that helps in shaping of the future of individuals. Such an important attachment to education can be established based on the investment that goes towards education in relation to other programmes in most countries (Ombok, 2007). Many countries of the world have allocated huge sums of money in their national budgets to enhance attainment of education to the citizens. In Kenya, about 30% of the national budget goes to education (Abagi and Olweya, 1999; Ngang'a, 2010).

The importance of Geography in secondary school curriculum cannot be overemphasized. It trains the learners to manage their environment for the good of the society as a whole (Bloomfield, 1970). As one of the optional subjects in the secondary school curriculum, Geography is being taught in most Kenyan secondary schools (MoEST, 2005). The effectiveness of teaching in the school can be measured by examining the methods of teaching applied by the teacher and the performance of students in the school examination (Eshiwani, 1987, 1988). It can be measured by the level of teachers' subject matter competence which Mullens (2003); Yambo (2012) regarded as a prime predictor of students' learning. However, when a teacher teaches without adequate planning, he/she can do nothing better than recite notes to the learners while the learners become passive receivers.

The students' performance in Geography at the end of the secondary school course has not been satisfactory for the last five years (KNEC 2004-2009). This raises a question among teachers and students as to why performance in Geography remains low year after year. Improving the performance of Geography education is a great societal need in Kenya not only for industrialization of the country as contained in the vision 2030 but also for ensuring food security in the country through practices like land reclamation and irrigation farming (NESC, 2007; Krathwohl, 2008). The challenge thus has been how to make Geography more "alive", more "real" and more manageable by secondary school students. It is, therefore important to examine the way this subject is taught in our secondary schools.

### **Statement of the Problem**

In Kenya and especially in rongo district, student's performance in geography is poor and does not show any trend for improvement. For the last five years the subject has had a mean score of less than 5.0 (mean grade of c) and below (rongo district education officer, 2004-2009).

Table1. KCSE Performance in geography in Rongo District, 2005 – 2009

Years	2005	2006	2007	2008	2009
Mean Score	3.89	4.32.	4.86	2.22	4.14

Source: District Education Office, Rongo – 2010.

The poor performance as shown in the mean score for the subject causes a lot of concerns to the stake holders and students of Geography in particular. From the researcher's personal experience, it has been observed that the poor performance in the subject has also caused fear in some students resulting in some deciding to drop the subject in the second term of form three in favour of History and CRE. If the issues causing poor performance in geography is not delineated and improved then the trends of poor performance in the subject will not end resulting to poor subject combinations among students who pass to gain admission at the university. The problem for this study is therefore to find out whether the poor performance of students in Geography in the KCSE is as a result of the teaching method used or not.

### **Traditional Methods of Teaching**

The Kenya Institute of Education describes Geography as a dynamic subject that responds to constant environmental changes (KIE, 2008). The traditional methods include lecture, discussion, demonstration, project and field trip methods (Malusu and Wachira, 2008).

### **Lecture Method of Teaching**

Lecture method is one of the oldest methods of teaching. It is a teaching and learning procedure by which the teacher seeks to create interest, to influence and stimulate his students, and to get them involved in learning by the use of verbal message (Mukwa and Otieno, 1988). The students' activity is listening and taking notes (Malusu and Wachira, 2008). There are two forms of lecture method: formal lecture where communication is only one way and the informal lecture where the communication is two way i.e. from the teacher to students and from students to the teacher. In Geography teaching, formal lecture is more appropriate because it provides the teacher with feedback from the students. Although this method is teacher centred, it is mainly used by Geography teachers when presenting factual information or teaching a large class (Gitau, 2008). However, Thungu (2008) argues that the method limits the students' participation in the lesson and does not develop the students' power of reasoning. Alcorn (2010) justifies the use of lecture method in secondary schools under the following conditions: when presenting important materials not easily obtainable, when supplementing text book materials, when developing interest and appreciation, when summarizing important points after a unit study. As advocated by the Gestalt psychologists, facts and information are meaningful only when they are taken in relation to the whole concept being taught (Were, 2003). From the researchers experience as a Geography teacher, it has been realized that the teacher's personality contributes a lot to the success of lecture as a teaching method e.g. Manner of dressing, good diction, voice projection, correct pronunciation and proper intonation facial expressions and gestures are effective means of developing students enthusiasm as well as of making lecture method alive (Mukwa, 1988). He states that when using lecture, the teacher should consider the following aspects:

1. His personality as a teacher: the teacher should be competent, friendly and interesting.

2. Consideration of the students: the teacher should make arrangements to ensure that the students follow and understand the lecture e.g. provide hand-outs.
3. The teacher should plan and organize the main point of the lecture in a systematic and logical sequence.
4. The teacher must carefully use the language which students can understand and follow.
5. The teacher should use the lecture method alongside audio materials in order to enhance teaching effectiveness.

### **Discussion as a Method of Teaching**

According to Gitau (2008), he defines discussion method as the oral interaction between people which consists of asking questions and giving answers. He further says that the method involves active participation of students and giving feedback and therefore is an effective method of teaching. The Kenya Institute of Education puts one of the objectives of teaching Geography in secondary schools as “to state, interpret, analyse and use geographical principles and methods to solve problems of national development” (KIE, 2008).

The use of discussion method is suitable for meeting the objectives of Geography teaching because the method provides an effective means of developing skills and of utilizing facts and information i.e. students not only learn to communicate ideas, but also to dissect and evaluate them and find wider and more practical applications for them. As a result, better understanding is ensured making learning more meaningful and more lasting (Quist, 2005).

There are two types of discussion method: The expository oriented discussion and the inquiry oriented discussion (Ayoti and Patel, 1992). In expository oriented discussion, the teacher presents his objectives, explains the learning activity, demonstrates it and then invites questions from students before he concludes the teaching activity.

For example, when teaching about the topic “the Great Rift Valley”, the teacher can explain what the Rift Valley is, show the location of the Great Rift Valley and Then ask students to give their views on the importance of the Rift Valley to the people of Kenya. In groups the students will discuss, record their views and present before the whole class before the teacher give the summary of the importance of the Great Rift Valley. The second type of discussion is inquiry oriented discussion, the teacher states the objectives, arranges for the discussion to take place and the whole activity is open ended. This type is not suitable for teaching Geography since in it there are no specific conclusions to be reached.

According to Awiti (2010), discussion method can be effective and successful when the following preparations are made by the teacher and the students: the students given adequate time to search for information on the topic; the teacher avails the documents or assists the students by suggesting sources of information; and the students to be organized in appropriate groups and choose group leaders to record the points raised during discussion. Ngaroga (2008) emphasizes that the teachers role during discussion should be that of a guide. The students are therefore given time to express their ideas and participate actively in the lesson. Discussion method is therefore appropriate for teaching when the topic requires flow of information and ideas from the teacher to students, from students to teacher or student to student.



### **Demonstration**

According to the Kenya secondary school Geography syllabus, demonstration is one of the suggested teaching methods to be used by teachers. The syllabus also states that Geography in secondary schools should enable the learner to acquire appropriate skills as a basis for technological and industrial development (KIE, 2008).

The acquisition of knowledge is possible through oral instruction like explanation while acquisition of skills can be through demonstration.

Thungu (2008) states that learning by observation is followed by doing; hence, drill and practice exercises are required to enable the students to eventually perform the activity on their own as individuals or as a group. Topics in Geography like weather measurement and map work can be effectively taught if demonstration is used. Studies done by Mukwa and Otieno (1988) observed that the emphasis in demonstration is learning by observing and it should often be followed by doing. Omwoyo (2009) describes demonstration as a teaching method which combines telling, showing and doing for the benefit of the students. The above description of demonstration is supported by the Chinese saying, 'when I do, I understand'. Malusu and Wachira (2008) state that in the hands of a resourceful efficient and competent teacher, demonstration method of teaching can be very effective because it trains the students to be good observers, stimulates their thinking, and the formation of concepts and generalization. As Waka and Ngigi (2009) puts it, our students need to be taught using those teaching methods that will build confidence in them so that when they get to exam rooms, they can perform well.

According to the researcher's experience, the use of demonstration requires thorough planning and rehearsal of the activity. This is because the method exposes the teacher to be assessed by the students and the success in demonstration clearly reveals the competence of the teacher.

### **Field Work as a Method of Teaching**

Field work as a method of teaching has been defined as a science of selecting, observing, evaluating and reporting information in a specific area (Gitau, 2008). It involves the direct use of the environment as a source of physical information. It can be organized to cover the area around the school. Most secondary school teachers have had a misconception that field work is only effective when the study is taken to a far area. This misconception has made field work to be used only by a few schools and can only be used once or twice in the entire secondary school life of a student. The high costs involved when the students are to travel to distant places; the travelling risks that the students get exposed to; the time taken for the study trip which is considered by some teachers to be excessive in terms of the rewards it will reap; and finally, a lot of administrative work which is not usually welcomed by teachers who are already busy with other commitments make field work unpopular.

Ngau and Nyamweru (1986) present field trip as a very effective method of teaching in secondary schools. He notes that the method when correctly used involves the students during preparation stage through information gathering on the topic and preparation of the data collection instruments like questionnaire; during presentation stage through student involvement in data collection activities such as asking questions, collection of samples and recording of information; after the lesson through follow up activities such as report writing and presentation, display of collected items and doing a test.

As Ngaroga (2008) puts it, the involvement of the students in the learning process provided by field work as a teaching method provides the learner with sound and concrete basis for conceptualization, first-hand information, makes learning more meaningful and gives the learner long lasting memory and opportunity for improving social relationships among students and between students and the teachers.

The use of field work in teaching Geography in secondary schools therefore helps in the attainment of one of the objectives of teaching Geography in secondary schools which states that; “by the end of the course the learner should be able to apply field work techniques in studying Geography” (KIE, 2002). Topics or themes like coasts and Coastal features can effectively be taught using the fieldwork method of teaching.

### **Project as a Method of Teaching**

Studies done by Lardizabal (1978) defined project method as a unit of activity carried on by the learners in a natural and life-like manner and in a spirit of purpose to accomplish a definite, attractive and seemingly attainable goal. Nacino (1980) viewed project to be essentially a learning unit, designed and conducted by students under the guidance of the teacher. He further stated that the project goals are established by the students based on their own background experience and they are encouraged by the teacher to work through study activities towards the achievement of those goals. Malusu and Wachira (2008) defines project as the Corporate or individual study of a challenging situation in real life in its natural setting with a view to reaching a positive and concrete achievement. The three definitions of project as a method of teaching reveal that: the topic chosen for study should be a real problem in the learners’ environment that when solved, the students will see a positive change in their environment. For example, students may be taken to an area around the school compound which has been affected by soil erosion and then asked to work in groups to conserve that soil. When this is done the students will feel satisfied and appreciate their work.

The method emphasizes the involvement of the teacher as a guide. Hence the method is learner centred. Whitcombe and Tombs (2007) states that when project method is used well by the teacher it enables the students to initiate and pursue knowledge, learn and work at their own pace, develop the spirit of curiosity, enquiry and investigative approach to acquire knowledge and to provide opportunity for the learners to come into contact with the problems, challenges and opportunities in real life situation. The merits of project method mentioned above are in line with one of the general objectives of teaching Geography in secondary schools which states that the learner should demonstrate the acquisition of positive attitudes, values and skills for self-reliance (KIE, 2008).

Researchers at the UK’s National Foundation for Educational Research carried out a study and found out that teachers who use project method such as gardening in their teaching improve the learners’ readiness to learn and encourage learners to become more active in solving problems (Jan et al., 2008). The report commissioned by the Royal Horticultural Society (RHS) says that the use of projects such as school gardening should be used as a key teaching tool rather than as an extra-curricular activity because it encourages learners to be more active in solving problems of their environment (Kogola, 2010).

### Questioning as a Method of Teaching

Questioning is a method where by the teacher asks questions and the learners give the answers. Questioning method is one of the oldest methods of teaching although it still stands as one of the most effective methods of involving the learners in the learning process (Nacino, 1980). From the researcher's personal experience as a teacher, and backed by research findings it has been observed that this is the most commonly used method of teaching (Mullen, 2003; Kyalo *et al.*, 2006; Sewe, 2006) and at the same time it is the mostly abused method of teaching (Morgan and Geong, 1972; Alebiosu, 2002; Ngaroga, 2008). For example teachers who are lazy and those who do not prepare well for their class will resort to questioning to pass time.

Nacino (1980) observed that with the change in our educational goals, from mere acquisition of facts and information to development of reflective thinking and intelligent manipulation of materials, the method of questioning has become more challenging for the teacher. For this method to be effective and for the teacher to overcome the challenges such as students asking irrelevant questions, he/she must be clear with the purpose for which he/she is going to ask questions and this shows that the questions must be prepared in advance. Farson and Crichton (1996) summarize the purpose of questioning into five categories; for teaching; for drilling; for guidance and teaching and for evaluating.

Eagly and Chaiken (1993) conveniently groups questions into two general types: factual questions involving mere recall of factual information and thought questions requiring effective thinking, application and intelligent manipulation of learned materials. KIE (2008) emphasises that Geography as a subject should help the learners to state, interpret, analyse and use geographical principles and methods to solve problems of natural environment. On this point it is implied that the Geography teacher should employ thought questioning in their teaching if the students have to achieve the syllabus objectives.

Commenting on the students poor performance in Geography in KCSE 2008, the secretary of MRKDEC noted that the questions requiring explanations were not explained properly as most of the students merely stated facts and were not conversant with the emerging trends in answering questions (MRKDEC, 2008). This fact reveals that Geography teachers mostly use factual questions during their teaching and therefore the students remain unprepared to handle thought questions in the exams. Ngaroga (1996) contributes to the effective use of questioning by stating the following steps to be followed by teachers:

1. State the question
2. Pause to allow the student to think about the answer to the question.
3. Call on the name of the student
4. Listen to the answer
5. Comment on the answer.

### Methodology

This study was based on descriptive research design. This is a research design that that intends to examine the situation as it is without any manipulation of variables. According to Kothari (2005), such designs are efficient methods of collecting descriptive data regarding the characteristics of populations, current practices and conditions or needs. They also help gather information from large cases by employing the use of samples hence cutting down on costs.



Given the above stated attributes, descriptive research design were adopted in this study in order to capture descriptive data from selected samples and generalize the findings to the populations from which the sample was selected. This study was conducted in Rongo district, which is one of the thirty six districts in Nyanza province of Kenya. Administratively, the district is further subdivided into three divisions and a further 10 locations and numerous villages scattered across its length and breadth. The district is located between  $0^{\circ}35'S$  and  $0^{\circ}57'S$  and  $34^{\circ}E$  and  $35^{\circ}E$ . It is situated about 300 km West North West of the Kenyan capital city, Nairobi. It lies at an average altitude that ranges between 1600-1800 meters above sea level. The district covers an area of about 346 km<sup>2</sup>. Because of the changes brought about by the new constitution, the area is now part of Migori County.

The rationale of choosing this district is because it is one of the rural districts where the overall performance of students has been low for a time despite having some of the best performing schools in the country. Schools like Kanga High School, St Joseph's Rapogi High school and Ulanda Girls' High School have been consistently appearing in the top 100 schools nationwide in KCSE examinations. In the year 2010, the total entry for students taking Geography in the district is 1042. Female students were 302 while male students were 704. These are found in 34 schools that register candidates for KCSE in the district. The study sample consisted of three hundred and eight students and eleven Geography teachers drawn from eleven secondary schools in Rongo district. The eleven schools is equivalent to thirty two per cent of secondary schools in Rongo district.

In order to identify the schools to be used from each division, simple random sampling was used. The researcher wrote the names of the secondary schools in folded pieces of paper. The papers were given to an independent person who will randomly pick the required numbers from each division. Any school whose name was chosen from the division were included in the list of sampled schools. Purposive sampling was used to ensure that there is gender equity. The researcher will include purposely at least one girl's school in the sampled schools.

In multi streamed schools simple random sampling were used to choose the streams to be use, for the study this were done by writing the names of the streams on pieces of paper, folding them and giving them to an independent person to choose. A total of eight students from each class were chosen and included in the sample using systematic random sampling this were done by getting students names from the randomised class register and selecting a student after every K<sup>th</sup> case from the class.

A total of eleven teachers were selected through stratified random sampling using divisions as units of study as shown on Table 2.

**Table 2: population of schools sampled for this study**

Division	Schools	Number of schools sampled	Students sampled	Number teachers
Awendo	11	3	84	3
Rongo	15	5	140	5
Chamgiwadu	8	3	84	3
Total	34	11	308	11

The researcher used a questionnaire, observation and documentary analysis as the main instruments for data collection. The selections of these instruments were guided by the nature of the data to be collected as well as the objectives of the study and time limits. After data collection, the responses to the questionnaire were coded, and then data was entered into the computer for analysis. Data was entered according to respondents' identification number based on the schools. The data which largely came from individual respondents was analyzed using descriptive statistics. Frequencies and percentages were used for descriptive statistics. The statistical package for social sciences (spss) version 15.0 was the computer programme used for the analysis of the data.

### Results and Discussions

Teaching Methods Used by Various Geography Teachers in Secondary Schools in Rongo District  
 The first objective of this study was to determine the teaching methods used by various teachers in secondary schools in Rongo District. To realize the aforementioned objective, several questionnaires in the questionnaires were geared to establish this information from the students and teachers. there were three main approaches used by the teachers in the course of teaching Geography to the students in Rongo District, i.e. 77.1% of the teachers taught Geography using methods classified under interaction approach. 23.3% used methods under collaborative approach and only 0.6% used methods under the transmission approach. No teacher used experimental or facilitation approaches.

Interaction approach: This involves the exchange of ideas between the teacher and the students or among the learners themselves. The methods under this approach include discussion, brainstorming and question and answer.

Collaborative approach. This involves learners sharing ideas in group and working together to solve a problem. Examples include project method and fieldwork.

Transmission approach: This is where the teacher dominates the lessons by use of oral transmission. Examples include lecture and exposition.

### The Teaching Methods used and Students' Preference for them

The researcher inquired from the teachers and students on the methods used in teaching Geography in Rongo District. The findings indicated that the use of question and answer method by teachers is at 85.3% while students' preference for it is at 48%. The use of field work by teachers is at 56.2% while the students' preference for it is at 75%. The use of assignment by

teachers is at 55.4% while its preference by students is at 54.2%. Demonstration is at 53.5% while its preference is at 78.1%. The use of discussion by teachers is at 58.2% while its preference is at 41%. The use of experiments by teachers is at 24% while its preference by students is at 72.3% and the use of project method by teachers is at 35% while its preference by students is at 61.2%. Fig. 4.2 therefore shows that the methods students prefer to be used to teach them are demonstrations 78%, fieldwork 75%, experimentation 72% and project 61%.

### Teacher’s Role on Evaluation of Students

The researcher also inquired from the teachers whether they evaluate students after a lesson is taught and whether the teachers checked students’ marks after a lesson. Similar questions were also asked the students to determine the differences in response to the same set of questions.

**Table 3 Students responses on teachers roles in evaluations of the students**

Response	Evaluation given		Check students work	
	Frequency	Percentage	Frequency	Percentage
Yes	140	47	153	51.6
No	157	53	144	48.7
<b>Total</b>	<b>297</b>	<b>100</b>	<b>297</b>	<b>100</b>

Table 3 shows that 47% of the student stated that the teachers evaluate students after lesson and 51.6% agreed that teachers check students work.

**Table 4 Teacher’s responses on evaluation and marking of students’ work**

Response	Evaluation given		Check students work	
	Frequency	Percentage	Frequency	Percentage
Yes	9	81.8	7	63.6
No	2	18.2	4	36.4
<b>Total</b>	<b>11</b>	<b>100</b>	<b>11</b>	<b>100</b>

From table 4, it was established that 81.8% of the teachers stated that they evaluate the students work after lessons. On the other hand 63.6% of the teachers stated that they mark the students work.

### Conclusion

The teaching methods preferred by teachers give better results than those preferred by the students.

### Recommendations

Teachers are to use the teaching methods which are preferred by students and are also recommended in the syllabus.

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