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Influence of Field Trip Activities on Secondary School Students' Interest and Achievement in Physics in Vihiga County of Kenya

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Abstract: The school curriculum consists of formal, informal and non-formal dimensions. Secondary schools in Kenya tend to emphasize formal curricular activities. Non-formal activities (NFA) are given less emphasis. Little was known regarding the contribution of field trips on students' interest and achievement in Physics. In Vihiga County of Kenya, participation in non-formal activities was poor with only 25 per cent rate of participation of schools. Yet students' achievement in Physics in the county is low with mean grade of D over the years 2006 to 2014. The purpose of this study was to determine the influence of field trips on secondary school students' interest and achievement in Physics in Vihiga County. The specific objectives of the study were to establish scope of participations in field trips, establish students' achievement in Physics, compared achievement of participants and non-participants in field trips, and compared interest of participants and non-participants in field trips. The study was based on descriptive survey and correlational designs. The population of the study was 1500 Form Four Physics students and 80 teachers of Physics. The sample size of 226 students and 53 Physics teachers selected from 114 schools by use of simple random sampling technique. Instruments for data collections were Student Motivation Questionnaire (SMQ), Teacher Questionnaire (TQ), Physics Achievement Test (PAT) and teacher interview schedule. Reliability of the instruments was established through test-retest method and the instruments were accepted as reliable at Pearson 'r' of 0.7 and above. Validity of the instruments was established through expert judgment by education faculty members. Quantitative data was analyzed by use of frequencies, percentages, means and Pearson correlation. Qualitative data was analyzed by use of thematic categories based on objectives of the study. The study revealed that field trip as an active method of teaching Physics is hardly utilised despite schools having buses to transport students to various learning sites near the schools. It was noted that school administrators are less supportive of field trips and focus mainly on non-academic formal activities. Both teachers and students indicated that field trips promoted learning since they are participatory, interesting and provide link with real application of science to classroom work.
Keywords: Field trip activities, students' interest and achievement in physics.

INTRODUCTION

Kenya is striving to develop technologically and scientifically, consequently its young people need to get into science and technology to realize its vision 2030. Physics education is one means a country requires for sustainable scientific and technological development in the contemporary society [1]. Social and economic benefits associated with Physics include equipping the youth with basic skills of innovation, problem-solving, creativity and prepares them for future careers in science and technology. Despite this, much needs to be done for many students to pursue Physics in secondary schools. Students' interest in science, achievement and enrolment in science courses has declined even in developed countries [1].

Low interest in science subjects cuts across the school system and is pronounced in Physics subject [2]. Perceived irrelevance of science is one reason for adolescents' low interest and motivation in science in higher education [2]. Science related careers have become a less attractive to young people in modern societies. Rahman and Spafford [3] carried out research in Australia found that Biology field trips reinforced student confidence in learning and helped improve social skills. The researchers pointed out that field trips and fieldwork produced positive impact on student

long-term memory due to the memorable activities encountered. However, there was a disagreement between students and teachers in the research on the specific values of field trips. Teachers and students agreed field trips helped students develop problem solving skills, social relationships, provided hands-on activities which added value to learning experiences. Teachers, however, refuted that the activities helped in choosing future careers. Dilon *et al*., [4] in reviewed 150 studies for years 1993 to 2003 found that fieldwork properly conceived, adequately planned, well taught and effectively followed up, offers learners the opportunities to improve their knowledge and skills. Dilon et al observed that fieldwork brings out every day experiences into the classroom and informs future careers choices among learners. Other related, studies have shown fieldwork boosts students' confidence in learning the subject content and helps improve social skills [5].

Researches also indicate that students are more confident in meeting academic challenges as a result of participating in field trips [6]. Studies on impact of field trips on student learning reveal that the role of the teacher in pre- and post field trips activities are critical to student learning [5]. Boyle *et al*., [6] found that students introduced to pre-visit instruction showed greater knowledge acquisition from the trips, while, Anderson [7] reported that post-visit activities associated with fieldtrips are necessary for student continued learning.

A study by American Institutes for Research [8] examined the effects' of outdoor education a form of field trip on the youth in California. The results showed that 225 students involved in out of class activities experienced an average 27 per cent gain in science scores as measured on a pre and post test scores of the experiment. In a study that investigated the effects of fieldwork on students' achievement and motivation in science education, Andrew [9], established that after one semester of seven fieldwork experiences the student population experienced a significant seven percent increase in achievement from the pre-test to post-test results.

Adeyemo [10] looked at the relationship between students' participation in school based non-formal activities and their achievement in Physics in Lagos State of Nigeria. He analyzed data from a survey of two hundred (200) students of senior secondary (3) III Physics students. Result revealed that participating in non-formal activities influenced students' achievement in Physics and that students' non-participation in the activities lead to poor academic achievement. According to Adeyemo [10] trips offered learners unique learning experiences which a classroom situation cannot replicate. According to Onasanya and Omosewo [11] Physics education is faced with numerous problems which limit its impact in Nigeria and the rest of Africa. The researchers argued that Physics is a subject that has remained difficult in the school curriculum. A study by Owolabi [12] on performance of Nigerian students in Physics at the Ordinary Level indicated poor performance. Ajaja [13] in a study to determine if student exposure to field trips influenced their knowledge of science process skills and achievement in Biology found a significant differences between participants and non-participants of field trips. The study concluded that field trip experiences enhanced students' understanding of science process skills, improved students' attitude towards Biology and significantly influenced their achievement. According to Ajaja [13] and Okere [14] the following should be considered prior to a field trip: discuss trip with head teacher and secure finances; obtain consent from parents, guardians and teachers whose lessons will be taken over by the trip; prepare student questionnaires and share out trip roles among students and discuss behaviour standards with students. Finally prepare for transport, feeding and accommodation without forgetting emergency issues.

Challenges in Physics curricular in Kenya and rest of African range from poor instructional methods, unqualified teachers, political inference, economic and negative cultural factors [15]. Other critical issues affecting Physics curriculum negatively in Kenya include the difficulty and abstractness of certain topics, mismatch of language of instruction and the common language, inappropriate textbooks, pressure of examination-oriented curriculum and inadequate Physics apparatus [16]. National performance in Physics at Kenya Secondary School Certificate (KCSE) lies between 20 per cent and 40 per cent [17]. This dismal performance prompted the Government of Kenya through the Ministry of Education Science and Technology (MoEST) and the Government of Japan through Japan International Co-operation Agency (JICA), to start a programme for Strengthening of Mathematics and Science in Secondary School Education (SMASSE). The programme focuses on improving teaching methods and encourages hands-on learning activities [18].

Past researches in Kenya have focused on classroom environment to improve performance in science subjects [19, 20, 16, 21]. Andrew [9] noted that students learn better through active learning methods such as project work, field trips, role play, discussion, simulation, and science club activities. However, a study by Okere [15] on the status of Physics teaching and examinations in Kenya secondary schools revealed that teachers hardly use field trips and project method in teaching. The findings showed that teachers never employed field trip strategy in their schools although many sites were available around the schools which could be visited for learning purpose.

Field work is suggested in the Secondary school Physics syllabus as one method of teaching science and provides learners with opportunities to practice science process skills [14]. The aim of field trips activities are incorporated in secondary schools in Kenya to motivate students to continue participating in Physics and to promote an understanding of the value of subject to the society [22]. Most students in Kenya secondary schools exhibit negative attitudes towards Physics and perform poorly in national the examinations [18, 23]. According to these researchers field trip activities are hardly evaluated in Continuous Assessment Tests (CATs), end-term examinations and even at Kenya Certificate of Secondary Education (KCSE) examinations.

Performance in Physics in most secondary schools in Vihiga County is poor, according to Western Provincial Director of Education statistics [24], Vihiga District Education office statistics [25], Emuhaya District Education Statistics [26], Hamisi District Education statistics [27] and Vihiga County Education statistics [28]. The statistics reveal that students who attempt Physics examinations at KCSE score grade D and below. The statistics further indicate the number of students enrolled for the subject is low, consequently this does not auger well for the entire society. Table-1 below shows the mean points and respective grades of student performance in Physics in Vihiga County for the period of the years 2006 to 2012.

Table-1: Vihiga County Performance in Physics for the Years 2006 to 2012

Year	Mean Points (Out of 12 points)	Grade
2006	3.23	D
2007	3.50	D+
2008	3.03	D
2009	3.05	D
2010	3.40	D
2012	3.01	D

Source: Vihiga County Education Statistics-2012

From Table-1, it is evident that performance in Physics subject has remained at grade D for almost the entire period indicated with exception of the year 2007 where the mean score was D (plus). Quality Assurance and Standards report 2011 of Vihiga County [29] indicated that participation in science congress, field trips, and science club activities was on the decline and stood at 25 percent of the total secondary school population in the county.

Poor grades in Physics affect most students' transition to higher levels of education, career training programmes and job opportunities that require knowledge of the subject. There is unrelenting poor performance in Physics by many learners in Kenya Certificate of Secondary Education (KCSE) examination. Dismal performance in Physics examinations is documented in the Kenya National Examinations Council reports [30-38]. The reports indicate that the candidates' overall performance in science subjects is low compared to the other subjects of the curriculum. Physics subject registers low scores nationally as shown in Table-2.

Table-2: Candidates Overall Performance in Physics for the Years 2001 to 2014

Year	Mean Score (%)
2001	35.24
2002	41.55
2004	41.03
2005	38.02
2006	37.00
2007	35.00
2008	35.43
2009	36.09
2010	35.05
2011	34.60
2012	37.04
2013	36.03
2014	35.05

The table-2 indicates poor scores in Physics subject when compared to the maximum total scores for the papers of 190 for years 2001 to 2005 and of 200 for examinations between 2006 and 2014. Njoroge, Changeiywo & Ndirangu [39] observe that overall students' performance in Physics at Kenya Certificate

of Secondary Education (KCSE) is poor and is coupled with low student enrolment. Reacting to 1999 performance in Kenya Certificate of Secondary Education (KCSE), Ndirangu [40] argued that secondary school graduates showed little mastery of the Physics subject content. In the year, performance in Physics and Chemistry was at 29 per cent and 28 per cent respectively.

In a related study that investigated the use of improvised teaching material by teacher trainees Ndirangu & Chege [21] found that secondary school students in Kenya displayed negative attitudes towards science subjects. Other problems affecting teaching of science subjects in Kenya secondary schools include, lack of text books, misconceptions, language, lack of teachers, conflict between African culture and the scientific method and abstract subject content [41]. As per the literature reviewed performance in Physics in Vihiga County is poor and that the effect of non-formal Physics curricular activities on Physics education curriculum needed to be investigated. This study therefore set to find out if Physics field trips significantly contributed to student interest and achievement in the subject. Specific objective of the study was to compare interest and achievement for participants and non-participants in field trips.

METHODOLOGY

This study employed a descriptive and correlation ex-post factor survey design based on motivation questionnaires and Physics achievement test. The target population for the study comprised of Physic teachers and form four Physic students in Vihiga County. The sample of the study was selected through stratified simple random sampling. A total of 217 students and 53 teachers were selected from twenty secondary schools. The instruments used to collect data were teachers' questionnaire, teacher interview schedule, students' questionnaire and Physics Achievement Test (PAT). Quantitative data was analyzed by use of frequencies, percentages, means, medians, standard deviations and Pearson product Moment correlation at significance level of 0.05 while qualitative data was grouped and analysed based no related themes.

RESULTS AND DISCUSSION

Students' participation in Field Trips Physics in Vihiga County

This study sought out to establish students' participation in field trip activities in the sampled school in Vihiga County. Table 3 shows frequency of student participation in field trip activities.

Table-3: **Students' Participation in Field Trips Physics Activities (N= 226)**

	Frequency	Percentage (%)
Participants	72	32
Non-participants	154	68
Total	226	100

From table-3, about 70 per cent of the student population didn't participate in field trips. This indicated that field trip as a method of teaching Physics is hardly used in Vihiga county schools. This is despite most secondary schools sampled in the study having ultra-modern bus and there were numerous sites to visit in the schools neighbourhoods. This results are consistent with the finding of Vihiga County Quality Assurance and Standards report [29], which revealed that participation in science congress, field trips, and science club activities in the county was on the decline and stands at 25 percent of the total secondary school population. In an earlier study that surveyed the status of Physics teaching and examinations in Kenyan secondary schools [15] found that teachers hardly used field trips and project method in their teaching though sites to visit were available around the schools.

Teachers' Profile

Over 80 percent of the teachers sampled for study were male while female were less than 20 percent of the study population. Further more than 80 per cent of the teachers sampled had teaching experience of more than four (4) years and less than five percent had worked for more than twenty years. This signified that a majority of teachers in secondary schools sampled were experienced in teaching the subject.

Factors Influencing Field Trips in Secondary Schools

This study also determined challenges teachers encountered while undertaking field trips activities in their respective schools. Table 4 below shows the opinion statement, the percentage frequency of teacher responses on factors influencing field trips.

Table-4: Teachers' responses in percentage of challenges encounter in preparing for Physics field trips (N=53)

Statement	SA F(%)	A F(%)	U F(%)	D F(%)	SD F(%)	MS
I experience financial constrains to undertake field trips ,	13(24.5)	29(54.7)	3(5.7)	5(9.4)	3(5.7)	2.17
The school schedule is tight,	9(17.0)	24(45.3)	4(7.5)	11(20.8)	5(9.4)	2.60
I lack means of transport to take students for the field trips,	11(20.8)	19(35.8)	4(7.5)	14(26.4)	5(9.4)	2.68
National examinations lack non-formal Physics field trip questions	10(18.9)	17(32.1)	9(17.0)	12(22.6)	5(9.4)	2.72
I lack time for field trips activities	4(7.5)	20(37.7)	2(3.8)	18(34.0)	9(17.0)	3.15
Visit sites have restriction on number of students to visit,	8(15.1)	12(22.6)	7(13.2)	15(28.3)	11(20.8)	3.17
The school administration is non-supportive of field trips	4(7.5)	15(28.3)	7(13.2)	18(34.0)	9(17.0)	3.25
I lack field trip sites for students to visits,	4(7.5)	7(13.2)	6(11.3)	25(47.5)	11(20.8)	3.60
I lack knowledge to integrate field trips in classroom learning	0(0.0)	2(3.8)	5(9.4)	21(39.6)	25(47.2)	4.30

Table-4 shows that more than (80%, SA-strongly agreed and A-agreed) of the teachers indicated that funding of field trips in most secondary schools was a major challenge. On the contrary, only about (15%) of the teachers disputed that financing was a hindrance to undertaking field trip activities in their schools. This implies that most school secondary budgets allocate insufficient funds for field trips thus denying students opportunities to learn from these novel activities. Though a number of secondary schools sampled for this study owned school modern buses, over (55%) of teachers sampled indicated that lack of means of transport affected field trips.

Further, Table-4 shows that over (65%) of the teacher's disagreed that visit sites lacked. Over (85%) of the teachers indicated they know how to integrate the Physics trips in their lessons while less than (5%) could not integrate activities. School administrators were non-supportive of field trip responses stood at (60%), however, slightly over than (30%) of teachers reported supportive administrator. These finding concured with Sarker and Frazier [42] and Dilon *et al*., [4] who found that lack of knowledge by teachers to integrate non-formal activities into classroom, teachers being unfamiliar with local resources available, lack of time to organize the activities and failure for schools to allow for field trips affected use of field trips.

This study further evaluated teachers' reasons for involving students in field trips in secondary schools. Table-5 displays teacher's reasons for involving students in field trip activities in schools.

Table-5: **Percentage of Teachers' reasons of involving students in field trips (N=53)**

Statement	SD F(%)	D F(%)	U F(%)	A F(%)	SA F(%)	MS
The field trips inspire students to choose Physics careers in future	0(0.0)	0(0.0)	3(5.7)	20(37.7)	30(56.6)	4.51
The field trips improve students' interest and motivation to learn Physics	0(0.0)	1(1.9)	2(3.8)	20(37.7)	30(56.6)	4.49
The field trips improve students' perception about the role of Physics and scientists in the society	0(0.0)	0(0.0)	7(13.2)	18(34.0)	28(52.8)	4.40
The field trips broaden students' view of Physics concepts and principles	0(0.0)	2(3.8)	7(13.2)	18(34.0)	26(49.1)	4.28
The field trips are relevant to class work,	2(3.8)	1(1.9)	2(3.8)	31(58.3)	17(32.1)	4.13
The field trips are teaching tools,	1(1.9)	3(5.7)	3(5.7)	29(54.7)	17(32.1)	4.09
The field trips enable students to travel to far places	15(28.3)	18(34.0)	7(13.2)	9(17.0)	4(7.5)	2.42
The field trips keep students busy in school	14(26.4)	27(50.9)	2(3.8)	6(11.3)	4(7.4)	2.28

Table-5, shows nearly (90%, SA-Strongly agreed and A-agreed) of the teachers indicated that Physics field trips improved students' interest and motivation to learn Physics while less than (2%) disagreed. Of all the teachers sampled, over (95% SA-Strongly agreed and A-agreed) agreed that field trips

inspired and informed learners' career choices. At least (85%) indicated the activities improved students' perception about the role of Physics and scientists in the society.

Table-5, further shows more than (80%) of the teachers observed that field trips broaden students' view of Physics concepts and principles. Over than (70%) rejected that the activities were done for travel and visit to far places as well as kept students busy in schools. This study concurred with Ajaja [13], who noted that field trips provide realistic means for observing organism and systems in their natural environment and enable students to gain first-hand information as well as offer opportunities for seeing and possibly touching and feeling what they have heard and read about. Further, field trips afford the students' opportunities of employing various senses in the process of learning science concepts hence increased retention of information learned. In support of the finding are Boyle *et al*. [6] and Anderson *et al*. [5] who noted that students are much more confident in meeting academic challenges as a result of participating in field trips. Kenya Institute of Curriculum Development (KICD) (2006) formally Kenya Institute of Education asserts that field trips help learners to develop interest, motivation and stimulate an appreciation of the importance of science.

Teacher Interview

Science teachers (N =8) interviewed indicated that field trip activities have the following effects:

- Stimulated individual input in science learning and provoked greater motivation and interest,
- Provided forum for debates on science issues and occasionally informed conclusions across all secondary school levels.
- Encouraged use of student's prior knowledge which in turn promoted critical thinking and reflection action on the field trip experience.
- Encouraged peer support, peer learning and adaption of new perspective and opinion about the science being learnt.
- Encouraged high level of student participation since it is an active approach to teaching and teaching.

The results above are supported by Bashir and Hussain [43], Eastwell & Rennie [44] and Oriachi [45] who found that non-formal science activities in general influenced student learning and performance and had a strong positive relationship between students' interest and their motivation with participation in non-formal science activities. In a related study, Awodun, Oni & Aladejana [46] revealed that students' attitude and interest in Physics is a better predictor of students' performance in Physics.

Students' Interest in Field Trips

This study also analysed participants and non-participants interest in field trip activities. Table 6 displays the means and medians of participants and non-participants students on a fourteen Likert scale statements on Student Motivation Questionnaire (SMQ) that compared students' attitude towards field trips and class work.

Table-6: Means and medians for participants and non-participants on field Trips statements

Statement	Participants		Non-articipants	
	Mean	Median	Mean	Median
1) When I participate in field trips my Physics marks improve	4.01	4.00	3.11	3.00
2) Class work has helped me to improved my Physics marks	4.59	5.00	4.27	4.00
3) When I participate in field trip my interest to learn Physics improve	4.38	5.00	3.47	4.00
4) Class work increase my interest to learn Physics	4.25	4.00	4.14	4.00
5) I like Physics when I am involved in class work	4.12	4.00	3.86	4.00
6) I like Physics when we go for field trips	4.04	4.00	3.29	3.00
7) I feel like a Physicist when we go for field trips	4.30	5.00	3.50	4.00
8) I feel like a scientist when we learn Physics in the classroom or laboratory	4.18	4.00	3.99	4.00
9) I understand the nature of Physics by going for Field trips (how Physics and Physicists work)	4.25	4.00	3.45	3.00
10) I understand the nature of Physics by learning in class (how Physics and Physicists work)	3.93	4.00	3.65	4.00
11)All Physics classes should incorporate more class work	3.49	4.00	3.24	4.00
12) All Physics classes should incorporate more field trips.	3.71	4.00	3.52	4.00
13) I am more likely to hand in assignments when they involve field trips.	3.60	4.00	3.42	4.00
14) I am more likely to hand in assignments when they are assigned to a class.	4.12	4.00	3.68	4.00

Table-6 shows that all the study respondents (N=226) scored means more than 3.00 and medians of over 4.00. This indicates students in schools rated equally field trips and classroom activities as important contributors to their learning. Still it can be observed that participants of field trips had a slightly high mean

of 4.38 on the statement when I participate in field trips my interest in Physics improved while the non-participants had a low mean of 3.47 on the statement. Participants of field trips activities had higher mean of 4.30 as compared to non-participants who posted a mean of 3.50 on the statement I like Physics when I go for field trips. This result concurred with Anderson *et al*., [5] who noted that fieldwork has a positive impact on long-term memory due to the memorable nature of the field trip setting. The researcher noted that field trips can reinforce affective and cognitive domain as well as provide a strong bridge to higher order learning.

Students' Achievement on Physics Achievement Test (PAT)

Table-7 shows number of students, means and medians of participants (N=72) and non-participant (N=154) on Physics Achievement Test (PAT) which had a maximum score of sixty (60) marks.

Table-7: **Achievement of participants and non-participant of field trips on Physics Achievement (PAT)**

Variable	Participants	Non-participants
Number	72	154
Mean	18.07	18.64
Median	18.50	19.00

Table-7 reveals that field trips are unpopular in secondary schools selected as reflected by the relatively few participants (72) as compared to 154 non-participants. Table-7 further, indicates that students' performance on PAT was below average compared to maximum score of sixty (60) marks. The non-participant of field trips slightly outperformed the participants of field trip activities by getting a slightly higher mean score of 18.64 as compared to lower mean of 18.07 for participants. Overall, students sampled in the study did not perform well in (PAT). This result are in agreement with Njoroge, Changeywo & Ndirangu [39] who observed that students' performance in Physics at Kenya Certificate of Secondary Education (KCSE) is poor and coupled with low student enrolment.

Interest of Participants' and Non-Participants in Field Trips

Table-8 shows number of participants, non-participants, means and medians on student motivation questionnaires (SMQ).

Table-8: Number, Mean and Median for participants and non-participant

Variable	Participants	Non-participants
Number	72	154
Mean	56.34	49.96
Median	57.00	50.00

From Table-8 it is evident that participant's (N= 72) of non-formal activities had a higher mean score and median on (SMQ). In contradiction, field trip activities participants who equally performed poorly on PAT recorded the highest mean of 56.34 as compared to non-participants. This results concur with Morag [47], who indicated that field trips or visits to learning sites enable students to see real applications of classroom science thus motivating them to study hard and join careers in the observed Physics activities. Also in agreement are Ajaja [13] and Anderson *et al*., [5], who observed that field trips provide realistic means for observing things in their natural environment and in return enabled students gain first-hand information about Physics application .

Correlation between Physics Achievement and Student Motivation

The means and standard deviation of PAT and SMQ are present in Table 9. The Pearson moment correlations values of PAT and SMQ variables for participants and non-participants are displayed in Table-9.

Table-9: **Numbers, Means, Standard deviations and correlation coefficients for Participants and Non-participants on Physics Achievement Test (PAT) and Student Motivation Questionnaire (SMQ)**

	Participants	Non-participants

Variable	PAT	SMQ	PAT	SMQ
Number	72	72	154	154
Mean	17.94	58.33	18.64	49.95
Standard Deviation	7.49	7.69	7.44	7.98
PAT-participant	1	.183*		
SMQ-participant	.183*	1		
PAT-non participant			1	.222*
SMQ-Non participant			.222*	1

*Correlation is significant at the 0.05 level (1-tailed).

Contrarily to expectation Table 9, shows non-participants (N= 154) of field trips had slight high correlation (r(154) =.222, p< .05) on PAT scores and Student Motivation Questionnaire scores as compared to non-participants(r(70) = .183, p< .05). However, notably from the Table 9, the standard deviation for the four variables were almost the same (SD = 7.5). This indicates that performances of the two groups on PAT and SMQ were not significantly different. Though, these results indicate Physics performance is slightly influenced by field trip activities, the significance different in number of participants (N=72) and non-participants (N=154) could be cause of the inconsistency. These results corroborate with Adeyemo [10] who suggested that school based non-formal activities have significant influence on students' achievement. The findings also agree with Marsh and Kleitiman [48] who pointed out that students who participate in non-formal activities achieve better than non-participants. Further the results are in line with [49] find that students' involved in activities outside the school classroom achieve better in academics, especially if they participated in academic related activities.

CONCLUSION

Results from study revealed that both teachers and students highly rated Physics field trips as effective tools for teaching the subject. The two groups concurred that field trips improved interest and motivation since they provided real and stimulating environment which cannot be duplicated in the classroom setting. However, there was no significant relationship between student performance on Physics Achievement Test (PAT) and exposure to Physics field trips. This was attributed to the fact that the sample had many students who had gone for Physics field trips in their entire four years period of secondary education. Though, most of the secondary schools in Vihiga County owned ultra-modern buses and many sites to visit near the schools few field trips were undertaken. The study also established Physics teacher faced numerous financial challenges to undertake non-formal academic activities and parents mostly funded the activities.

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