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Global Journal of Physical and Applied Sciences
ISSN XXXX - XXXX (Online)
Vol.1, Issue 1, pp 14 – 26, 2023

Characteristics of Teachers and Learners and their Impact on Academic Performance in Physics in Secondary Schools in the Kananga Region, Congo

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Abstract

Purpose: This study sought to investigate teachers' and learners' characteristics influencing enrolment and academic performance in Physics among secondary schools in Kananga region, Congo.

Methodology: The study employed descriptive survey designs. The research design was used to effectively investigate, describe and explain the existing relationships, practice and trends as compared to enrolment, academic performance in Physics and teacher and learners characteristics. Chi-square technique was used to establish and describe the existing relationships.

Findings: The findings of this study revealed that there is low enrolment and poor academic performances in Physics in schools within Kananga region.

Conclusion: The study concluded that teachers and learners characteristics are key to enrolment and academic performance in Physics.

Recommendation: The study recommend that Physics teachers, school administrators, parents and other education stake holders should work together to provide modern facilities and infrastructure to improve teaching and learning of Physics so as to improve student enrolment and academic performance in Physics.

Keywords: *Teachers, learners, physics, academic performance.*

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Global Journal of Physical and Applied Sciences
ISSN XXXX - XXXX (Online)
Vol.1, Issue 1, pp 14 – 26, 2023

1.0 INTRODUCTION

1.1 Background of the Study

According to UNESCO (2015) report, science as an instrument aids development in any country. It has played a vital role in spearheading technological advancement, economic development, improving health and speeding up industrialization (Vilidya, 2003; Musasia, Abacha & Biyoyo, 2012). Science in Congo secondary schools is taught as three subjects: Biology, Physics and Chemistry. The three are compulsory in Form One and Two. At the beginning of Form Three, students are allowed to either continue with the three science subjects or drop one and advance with the other two.

Universally Physics is very different from Biology and Chemistry, since as a science it aims at explaining the laws of nature and is the backbone to scientific inventions, technological advancements and industrial developments. Physics is subdivided into six branches namely; Mechanics, thermodynamics, geometrical optics, waves, atomic physics: electricity and magnetism. These branches are presented as topics which are presented in spiral manner up to Form Four. According to Walvoord and Anderson (2011) a qualification in Physics at any level brings students a range of benefits both in career opportunities and intellectually. At secondary school level in Congo, physics lays the foundation as a requirement for a wide range of courses at post-secondary institutions. A degree in Physics develops an individual skill that leads to different career options ranging from manufacturing industries, computers, health services and the finance sector.

Over the years, secondary school students' interests in physics as a subject to study have been declining globally. The decline in interest has led to low enrolment and poor academic performance in Physics especially in Congo. The low enrolment and poor academic performance has made learners lack opportunities to pursue Science, Technology, Engineering and mathematics (STEM) courses in university (Mwangi, Gongera & Thinguri, 2013). Due to low enrolment in undergraduate STEM courses, few students are graduating with skills required in economic areas that depend on Physics knowledge such as engineering, Physics science teachers, computer science and others. As a result, various African countries may remain with few industries hence importing almost all goods from developed countries. To avert this, African countries have to strengthen teaching of Physics and entice learners at early stages in secondary schools to enrol for Physics subject and learners who enrol be guided by Physics teachers to ensure they are performing well academically (Mwangi, Gongera & Thinguri).

In developed countries, teaching and learning of Physics has been major focus. In U.S.A. Physics community and physics education is undergoing significant changes to improve teaching and learning of physics to create interest among students. Meltzer and Otero (2015) assert that Physic teachers have been exposed to and encouraged to participate in effort to reform and improve the way Physics is taught, at the K-12 which is equivalent to Form Four in Congo education system. With all the effort the enrolment still remains low and performance has remained consistently low. Meltzer and Otero posit that although nearly all high school students who reached the 12^{th} grade took Physics, this group represented less than five percent of their general cohort in the population. Kennedy, Lyons and Quinn (2014) postulate that there is a serious crisis in Australian high schools; where schools experience a continued and dramatic decline in Physics enrolment. Kennedy et al argues that it is important to address these declines in sciences and mathematics. Many countries in Africa are experiencing low enrolment and poor academic performance in Physics. According to UNESCO (2016), many

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Global Journal of Physical and Applied Sciences
ISSN XXXX - XXXX (Online)
Vol.1, Issue 1, pp 14 – 26, 2023

African countries are producing fewer inventions today than they did in 1990s.Countries like Ghana,

Nigeria, Ethiopia and Congo are experiencing crises in Physics studies. Taale (2011), states that Physics enrolment has consistently remained low with science courses making least number in enrolment. This consequently affects the number of students enrolling for physical sciences with a few students graduating with Physics. Nigeria is faced by the same problem of low enrolment and poor academic performance in Physics. Mbamara and Eya (2015) argue that in some secondary schools in Nigeria, no single student enrolls for Physics and also enrolment at tertiary level institutions is very scanty. Mbamara and Eya found that Physics teachers, have to work hard enough to develop the affective domain of Physics learning so as to improve enrolment and academic performance in Physics.

Ethiopia though one of the fastest technologically growing country in Africa, has the same challenge. Semela (2010) asserts that, the rate of enrolment in Physics is lowest and applicants who are assigned to the Physics undergraduate programmes were those with lowest mean score in Ethiopia National Higher Education Entrance Examination (ENHEEE). Semela (2010) observed that science, specifically Physics is the backbone of many inventions. This is because the ultimate description of all physical systems is based on the laws of Physics. In Congo, since the introduction of Free Primary Education (FPE) in 2003 and subsidized secondary education in 2008 under the initiative 'Education for All' (EFA), transition rate from primary to secondary has significantly increased leading to high enrolments in Congo secondary schools. Secondary schools have been expanding construction of infrastructures in order to increase access to secondary education for learners transitioning from primary schools.

1.2 Statement of the Problem

Different factors shape students beliefs and attitudes toward Physics, these factors can be split to student-related factors, teacher-related factors, family factors and school related factors. Behaviorism, as a learning theory states that behaviours are acquired through conditioning, this conditioning occurs when an individual interacts with the environment. Majority of students join secondary schools with high determination and urge to become better in future through career development.

Physics is a very important subject in career development of all students. It lays the foundation to problem solving skills and general development to holistic approach in understanding the natural world. By the virtue of explaining natural phenomena, Physics is a basic requirement to most of post-secondary courses especially in relation to STEM. Despite the significance of Physics in all economies, the enrolment has significantly remained low, characterized by poor academic performance, especially in Kananga region secondary schools and little has been done on influence of teacher and learner characteristics. It was on these bases that the study sought to find out why most students are refusing to study Physics beyond the second year of their secondary term and the reasons for poor academic performance in secondary schools, is it because of the Physics teachers' characteristics or learners characteristics? If enrolment and poor academic performance in Physics continues to stagnate or decline it will have serious impact to science, mathematics, engineering and technological growth of our country.

1.3 General Objective

The purpose of this study was to investigate how teachers' and learners' characteristics have influenced enrolment and academic performance in Physics among secondary schools in

Global Journal of Physical and Applied Sciences
ISSN XXXX - XXXX (Online)
Vol.1, Issue 1, pp 14 – 26, 2023

Kananga region, Congo. The study also wanted to establish the relationship between school categories, enrolment and academic performance in Physics.

1.3.2 Specific Objectives

The specific objectives that guided this study were;

1) To identify the Physics teacher characteristics influencing enrolment and academic performance in Physics.
2) To establish the relationship between Physics teacher characteristics, and enrolment and academic performance in Physics.
3) To determine the extent to which learner characteristics influence enrolment and academic performance in Physics.
4) To establish the relationship between school categories, enrolment and academic performance in Physics.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Constructivist Learning Theory

The main proponent of Constructivist learning theory was Jerome Bruner in 1966. The theory proposes the idea that learners construct knowledge and meanings for themselves individually and socially during learning process. Constructivism learning theory describes learning as an approach where the teacher provides learners' with an opportunity to construct their own sense and meaning in interpretation of what is being learned (Bruner 1966). Borich and Tombari (2004) argue that constructivist learning theory emphasizes on learners' structure of internal connections and relationships with facts and ideas taught. Constructivist approach in teaching and learning emphasizes the use of learner centred approach such as discovery learning, knowledge building and active learning. These approaches help the learner in exploring freely within a given structure in order to create their own meanings and understanding of concepts.

Constructivism theory also helps the teacher in designing and utilization of learning materials that engage, stimulate and support meaningful learning of Physics. This creates interest among students hence increasing enrolment and improve academic performance in Physics. Constructivist views the role of a teacher as that of a facilitator and a mediator where learning process is supposed to be student centred. Constructivist approach in teaching and learning of Physics improves the quality of learning Physics concepts (Tuwoso, 2016). Constructivist theory guided the study in understanding how teachers' ability to develop and utilize quality teaching and learning materials has affected learners' interest in Physics during lesson observations. When learners' interest in Physics is improved enrolment and academic achievement in Physics will improve. The theory was adopted in discussions and making of conclusions on Physics teachers' and learners' characteristics that are influencing teaching and learning of Physics.

2.1.2 Behaviorist Learning Theory

The theory of behaviorism has been used successfully in many different studies. This study provided another chance to apply the model in examining how students decide to enroll for Physics and study patterns that affect their performance. Behaviorist theory of learning is based on the principle that all behaviours are acquired through conditioning (Cherry, 2012; Mangaoang, 2013). The conditioning is environmentally induced. This theory was used in early 20th century by Ivan Pavlov in investigating reflexes and classical conditioning and Edward

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ISSN XXXX - XXXX (Online)
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Thorndike in study of Operant behaviour. They sought to understand behaviour through measuring observable behaviours and events. Student learning never happens in an isolated space (Cherry & Mangaoag). Different factors can enhance or undermine students' perception in learning any subject. In Congo students learn from the society, family, peers, school environment and teachers. This research applied behaviorist theory of learning in understanding and interpreting the role of society, family, Physics teachers, peers and school environment in encouraging or discouraging students in enrolling for Physics and studying Physics for excellent performance.

2.2 Empirical Review

A study by Welberg and Welch (1967) found that Physics teacher characteristics such as having 'outgoing teaching attitude' are more positive towards teaching and learning of Physics. Korur and Eryilmaz (2012) found that Physics teachers' characteristics have a greater influence on Students academic achievement and motivation in Physics and the characteristics affect female students more than male. Munene (2014) established that the teacher characteristics can influence learner's academic performance in Physics. The study sought to find if there exists a significant relationship between teacher characteristics, enrolment and academic performance in Physics among different categories of secondary school.

Kariuki (2013), Nderitu (2011) and Munene (2014) found that more research need to be done on teacher characteristics influence on Physics enrolment considering Physics teacher characteristics like teaching experience, academic attainment level, motivation and personality traits in other geographical areas in Congo so as to compare findings. Most of the researchers in Physics have found out that these factors are different in various geographical regions and therefore there was need to ascertain the research findings through a comprehensive research of Kananga region since no similar research had been done.

Akinsolu (2010), Centrall et al (2003), Kariuki (2013), Mkapang (2015) and Nderitu (2011) have all stated that student's perception and attitude in Physics is related to quality and standards of teaching which depends on various Physics teacher characteristics and therefore there was a serious need to study if there is a significant relationship between different teacher characteristics, enrolment and academic performance in Physics.

Mushtaq (2012) posits that schools, colleges and universities have no worth without students. Students are most essential asset for any education institution. Praviea (2005) and Stokking (2000) have argued that the social-economic development of any country is directly linked to students' enrolment more so in sciences. According to their studies, Physics is recognized widely as the pillar of a society's social economic development since it is the most elemental in all scientific and technological studies. Mushtaq (2012) continues to argue that students' performance in science is affected by differences in social, psychological, economic, environmental and personal factors.

Walvoord and Anderson (2011) found that a key goal of education is to ensure that every student has a chance to excel, both in school and in life after school. Academic success in school for students is the key determinant of their success as adults. Enrolment in physics does not depend on student's Physics previous achievement or mental and physical abilities alone, social-economic status has a great influence in what students' enroll in and how they perform. In public secondary schools, all students are considered equal regardless of their social-economic backgrounds. Most of the studies done in enrolment and academic performance in Physics disassociated learner's social-economic status as a key factor that can influence

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enrolment and academic performance in Physics. This study sought to establish whether social-economic status influences enrolment and academic performance in Physics. The question that the study addressed was "How significant is the learners' social-economic background to enrolment and academic performance in Physics?"

Osuafer and Okonkwo (2013) argue that home environment also influence students' academic interests through home activities. Children who are raised by parents who emphasize on homework and assignments when a student reaches home may have a different perception on Physics than those who are assigned to help parents with parental activities like grazing of animals, fishing, hunting, cooking and gardening to help poor parents in raising them. Students who are assigned parental duties may have little time to study, hence may perceive Physics to be a difficult subject therefore choose other sciences. The study was concerned that social-economic status may dictate the type of entertainment activities. Students from rich families may have access to TV programmes, toys, videos and others that arouse their curiosity to Physics while those from poor families may rely on their own creativity and improvisation. The question that the study tried to answer is 'among the diverse backgrounds, which student is likely to enroll and perform better in Physics?'

A study by Egalite (2016) asserts that mostly families choose their children's schools by selecting their neighborhood. Children whose parents select good schools may benefit as a consequence. Better educated parents are more likely to consider the quality of the schools they enroll their children and more likely pay attention to the quality of their children's teachers and may attempt to ensure that their children are adequately served. Highly educated parents can utilize their social interactions to enhance the development their children and may initiate them into social associations of well-educated individuals to ensure they attain high levels of academic success.

3.0 METHODOLOGY

The study employed descriptive survey designs. The research design was used to effectively investigate, describe and explain the existing relationships, practice and trends as compared to enrolment, academic performance in Physics and teacher and learners characteristics. Chi-square technique was used to establish and describe the existing relationships. Stratified random sampling was used to come up with the research sample. Data was collected using principal's interview guide, lesson observation guide and questionnaires for HOD sciences, Physics teachers and students. Data analysis was done by use of descriptive statistics through Statistical Package for Social sciences (SPSS) IBM version 2.0. Frequency tables, bar graphs and pie charts were used to present analyzed data.

4.0 DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Demographic Characteristics

The target population was all public secondary schools in Kananga region consisting of 52 principals, 52 HODs sciences, Physics teachers and students. 5 (36%) of HOD Sciences sampled were female and 9 (64%) were male. For Physics teachers 12 (87%) were male while only 2 (13 %) were female. This was a clear indication of existence of gender imbalance within the school categories. Only two schools had Physics enrolment of 50% and above, one 49%, one 32% and the least had less than 30%. The study revealed that 64% of Physics teachers have experience of 0-5 years in teaching, 29% have 6-10 years and 7% have 11-15 years. This shows that majority of Physics teachers have little experience and are fresh graduates from universities.

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4.2 Descriptive Analysis

4.2.1 Relationship between Teacher Academic Achievement, Enrolment and Academic Performance in Physics

To evaluate the relationship between teacher academic achievement and Physics enrolment, the enrolment percentages in all schools was grouped into three levels (10-20) %, (21-40) % and (41-60) % and tallied against the respective teacher academic qualification. Chi- square value was determined as Shown in table 1.

Table 1: Chi-square values for teacher academic achievement and physics enrolment percentage

Academic achievement	Physics enrolment percentage								
	(10-20)%			(21-40)%			(41-60)%		
	O	E	$(E-O)^2/E$	O	E	$(E-O)^2/E$	O	E	$(E-O)^2/E$
Degree	4	3.7	0.024	6	6.5	0.038	3	2.8	0.014
Diploma	0	0.3	0.3	1	0.5	0.25	0	0.2	0.2
Totals			**0.324**			**0.288**			**0.214**
Chi Square	0.826								

Setting $\alpha=0.05$, $df=2$, $\chi^2= 0.826$

Assuming there is no significant relationship between teacher academic achievement and Physics enrolment, the calculated value of χ^2 is 0.828. The value is much smaller than the p value (5.99) with probability of less than 5%, therefore the relationship is non-significant. This implies that academic achievement has no significant influence on Physics enrolment. To test whether there is significant relationship between teacher academic achievement and academic performance in Physics, the mean score percentage was grouped into three categories (1.0-3.0), (3.1-5.0 and (5.1-7.0) and tallied across the respective academic achievement. The observed frequencies, expected frequencies and chi-square was determined as shown in table 2.

Table 2: Chi-square values for academic performance in physics and teacher attitude towards teaching

	Physics mean grade								
	1.0 to 3.0			3.1 to 5.0			5.1 to 7.0		
	O	E	$(E-O)^2/E$	O	E	$(E-O)^2/E$	O	E	$(E-O)^2/E$
Diploma	1	0.21	2.97	0	0.57	0.57	0	0.21	0.21
Degree	2	2.79	0.22	8	7.43	0.04	3	2.79	0.02
Total			**3.19**			**0.61**			**0.23**
Chi-Square			4.03						

Setting $\alpha=0.05$ and $DF=2$, $\chi^2 = 4.03$

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Assuming there is no significant relationship between teacher academic achievement and academic performance in Physics, the calculated value of χ^2 is 4.03. The value is much smaller than the p value (5.99) with probability of less than 5%, therefore the relationship is non-significant. This implies that academic achievement has little significant influence on academic performance in Physics. Although the relationship is non-significant, Akinsolu (2010) and Alimen (2009) points out that academic performance and enrolment in Physics can be boosted through accessibility of qualified Physics teachers who value other attributes of quality teaching.

4.2.2 Relationship between Teacher Experience, Enrolment and Academic Performance in Physics

Assuming there is no significant relationship between experience and enrolment in Physics, the calculated value of χ^2 is 105.04. The value is much larger than the p value (9.49) with probability of less than 5%, therefore the relationship is significant. This implies that teacher experience has a significant influence on enrolment in Physics. To test the relationship between teacher experience and academic performance in Physics, the mean score percentage was grouped into three categories (1.0-3.0), (3.15.0 and (5.1-7.0) and tallied across the respective teacher experience. The respective observed frequencies, expected frequencies and chi-square was determined as shown in table 3.

Table 3: Chi-square values for academic performance in physics and teacher experience

Experience in Years	**Physics Mean Grade**								
	1.0 to 3.0			**3.1 to 5.0**			**5.1 to 7.0**		
	O	**E**	**$(E-O)^2$ / E**	**O**	**E**	**$(E-O)^2$ / E**	**O**	**E**	**$(E-O)^2$ / E**
0-5	3.5	3.5	0.00	21.0	21.2	0.00	12.0	11.8	0.00
6-10	2.0	1.6	0.10	8.4	9.8	0.20	6.5	5.4	0.22
11-15	0	0.4	0.4	4.0	2.3	1.26	0	1.3	1.3
Total			**0.50**			**1.46**			**1.52**

Setting $\alpha=0.05$ and DF=4 $\chi^2=3.48$

Assuming there is no significant relationship between teacher experience and academic performance in Physics, the calculated value of χ^2 is 3.48. The value is much smaller than the p value (9.49) with probability of less than 5%, therefore the relationship is non-significant. This implies that teaching experience has no significant influence on academic performance in Physics.

4.2.3 Influence of Learner Characteristics on Enrolment and Academic Performance in Physics

4.2.3.1 Influence of Students' Study Habits on Enrolment and Academic Performance in Physics

The principals were asked to comment on the discipline of students who take Physics, they all said that students who perform well in Physics are disciplined, committed to reading and group discussions, good time managers and always read ahead of the teacher. The HOD sciences were

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asked to rate the study habits of Physics students in a scale of very good, good, fair, poor and very poor. Very good and good to mean a well-disciplined student committed to academic excellent, fair to mean average student and poor and very poor to mean uncommitted student who is not concerned with his/her academic performance in Physics. The results were 1 (7%) very good, 6 (43%) good, 5 (36%) fair, 1 (7%) poor and 1 (7%) very poor. This shows that half of HOD sciences rated Physics students as having good study habit, 36% as average students and 14% felt Physics students are not committed to their studies. This means half of Physics students have good study habit and are determined while another half, have poor study habits. From the principals' interview report, the study observes that, poor reading habits and lack of discipline leads to students lacking interests in Physics hence dropping it during selection leading to low enrolment in Physics and those who have enrolled perform poorly in Physics examinations. Physics teachers and HOD sciences were provided with statements on Physics content and students study habits to gauge in a scale of strongly agree (SA), agree(A), neutral(N), disagree (D) and strongly disagree (SD). The results were as shown in table 4.

Table 4: HOD sciences and physics teacher response on physics content and students' perception

Statement		HOD Sciences					Physics Teacher				
		SA	A	N	D	SD	SA	A	N	D	SD
Physics content is difficult for students	F	0	1	3	8	2	0	3	4	2	5
	%	0%	7%	21%	58%	14%	0%	21%	29%	14%	36%
It is hard to pass in Physics compared to Biology and Chemistry	F	1	1	1	5	6	0	0	1	2	11
	%	7%	7%	7%	36%	43%	0%	0%	7%	14%	79%
Physics syllabus is too broad and difficult for students	F	2	0	1	8	3	0	0	2	5	7
	%	14%	0%	7%	58%	21%	0%	0%	14%	36%	50%
Students who don't perform in Mathematics cannot pass in Physics	F	1	5	5	2	1	2	5	2	3	2
	%	7%	36%	36%	14%	7%	14%	36%	14%	21%	14%
Students like spending more time studying other subjects than Physics	F	1	4	3	4	2	2	4	3	2	3
	%	7%	29%	21%	29%	14%	14%	29%	22%	14%	21%

Table 4 shows that none of HOD sciences and 21% of Physics teachers agreed and strongly agreed that Physics content is hard for students. 79% were neutral, disagreed and strongly disagreed. This means physics content is not hard for students to study and pass.

4.2.4 Influence of Learner's Career Aspirations and Peer Interactions on Enrolment and Academic Performance in Physics

Physics has very wide career opportunities after a learner completes secondary school. Physics is a very important subject in development of STEM related courses in post-secondary

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institutions. A student who takes Physics can venture into different careers such as manufacturing industries, computer science, healthy sector, finance sector and energy. Learners' interest in Physics has been declining over the years (Munene, 2014). The study sought to find if learner's career aspirations influence selection of Physics or if learners are influenced by peers. The HOD sciences were asked if Physics is vital for student's future career.13 (93% said yes and 1 (7%) said no. The HODs were also asked to gauge students' awareness of career opportunities if they pursue Physics at a scale of very good, good, fair and poor. The results were as shown in figure 1.

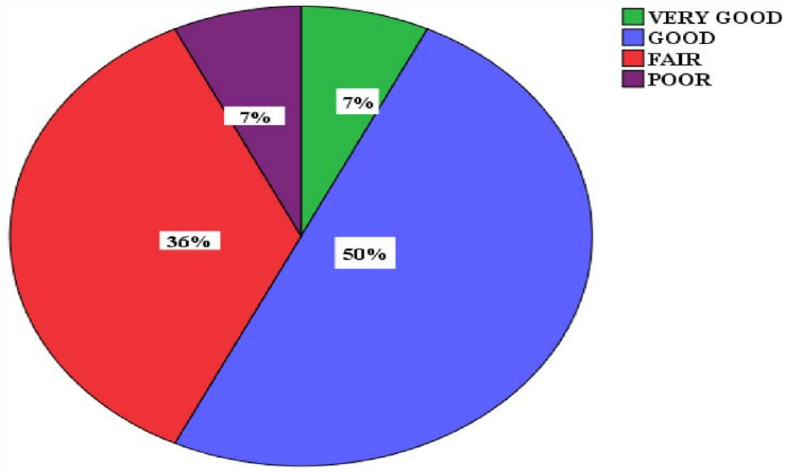

Figure 1: HOD sciences opinion on students' career awareness

From figure 1, 7% of HOD sciences felt that students awareness of Physics careers is very good, 50% good, 36% fair and 7% poor among students. This shows that students have sufficient information on Physics career opportunities.

Table 5: Physics students response on career and peer influence

Statement		SA	A	N	D	SD
Physics is useful for my future career	**f**	86	39	11	3	3
	%	61%	27%	8%	2%	2%
My friends (peers) advised me to choose physics	**f**	6	8	6	39	83
	%	4%	6%	4%	27%	59%

Table 5 shows that 61% of Physics students strongly agreed that Physics is useful for their future career, 27& agreed, 8% were neutral, 4% disagreed. This shows that 88% of Physics students are informed on career advantages and opportunities they will have if they study and pass in Physics, 4% disagreed to mean they selected Physics for other reasons than career advancement in future and 10% agreed they were influenced by peers to select physics, 4% were neutral and 86% disagreed to be influenced by peers to select Physics. The study observes that those students who select Physics are influenced mostly on career opportunities aspirations as compared to positive peer influence among the Physics students.

The study sought to find the opinion of non-Physics students on career and peers influence. They were provided with converse statement to gauge. The responses were as shown in table 6.

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Table 6: Non-Physics students response on career and peer influence

Statement		SA	A	N	D	SD
Physics was not useful for my future career	**f**	20	31	26	29	16
	%	16%	25%	21%	24%	13%
My friends (peers) discouraged me from taking physics	**f**	16	17	12	39	38
	%	13%	14%	10%	32%	31%

From table 6, 41% of students who dropped physics agreed it was not useful for their future career, 21% were neutral and 37% disagreed that physics was not useful for their future career. This means that they felt it was useful but they didn't select it for other reasons. 27% also agreed they were influenced by peers to drop Physics while 63% disagreed to have been influenced by peers. The Physics teacher and science department can ensure that learners are well informed of STEM careers and their subject requirement to boost enrolment and better academic performance in Physics. The findings of this study agree with the findings of Nderitu (2011) who found that majority of students who select Physics are those who feel it will help them get a good career. Since learners' awareness on Physics career opportunities is high, financial motivation such as paying Physics related jobs better salary than others will motivate learners towards Physics subject in secondary schools. Secondary school principals can also organize expert career forums through guidance and counselling departments to boost career awareness and students' interests in Physics.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

Enrolment and academic performance in Physics has been influenced to large extent by Physics teacher and learner characteristics. The Physics teacher experience, academic attainment and personality play a major role in modelling and improving learners' interests in Physics. If learners perceive Physics teacher as interactive and friendly, they develop strong interests in Physics and this can lead to high enrolment and better academic performance in Physics. The study also concluded that Physics teachers need to embrace and utilize activity centred learning in order to improve knowledge acquisition and retention among Physics students. Physics teachers also need to develop cooperative learning skills among the learners as opposed to competitive methods. In addition, Poor performances in Physics in previous exams discourage learners from pursuing Physics beyond compulsory levels. Poor study habits are existing among learners and there is need to train learners to embrace proper study habits earlier in Form one in order to perform well in Physics. Academic performance in Physics influence Physics enrolment in a linear relation.

5.2 Recommendations

The study recommended that, the Physics teachers in all secondary schools are advised to embrace and use effective modern teaching methods and approaches which encourage cooperation rather than competitive knowledge acquisition and retention among Physics learners and invest extra time in explaining concepts and difficult content to learners. Physics teachers need to inspire learners early on STEM related courses so as to entice them to enroll for Physics and train them on better study habits for better performance.

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The HOD sciences and school administrators need to mentor newly employed Physics teachers on pedagogical skills so as to equip them with experience and knowledge manipulation strategies that can address the challenges of difficult Physics content delivery to learners. Parents, school administration and Physics teacher employers need to ensure Physics teachers are well motivated to teach Physics since motivation determines attitude and personality Physics teacher project to students. In addition, Parents need to participate, work with Physics teachers, school administrators and guidance and counselling department in order to guide their children during subject selection.

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