

# Teachers' Job Satisfaction and Turnover: Re-Examining Learning Achievement in Biology in Public Secondary Schools, Garissa County, Kenya

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## Abstract

Teachers spend lengthy periods of their lifetime in school work environments and their satisfaction in the job has crucially far-reaching implications. Besides making them feel good about themselves, job satisfaction draws on teachers' well-being as satisfied teachers are less susceptible to leaving their positions. The aim of this paper was to evaluate teachers' job satisfaction as a teachers' turnover factor in influencing learning achievement in Biology in public secondary schools in Garissa County. Guided by Becker's Human Capital Theory of Occupational Choice, the study was driven by a philosophical paradigm borrowed from the Pragmatic Worldview and adopted a convergent mixed-methods research design. The study targeted 2786 respondents comprising 2691 form three students and 95 Biology teachers from 40 public secondary schools from which 27 schools were picked through stratified random sampling. The sample size constituted 336 form three students and 51 Biology teachers obtained through simple random and purposive sampling respectively. Questionnaire and document analysis guide were used in data collection. Both descriptive and inferential statistics using Pearson Product Moment Correlation and Linear Regression were done. The study established that job satisfaction ( $r=0.67$ ,  $p<0.05$ ) had a positive significant correlation with learning achievement in Biology. The study therefore concluded that, teachers' job satisfaction influenced learning achievement in Biology in public secondary schools in Garissa County. The study recommended strategies that should lower teacher turnover and increase learning achievement in Biology thus; re-visit salary schemes for teachers to ensure they re-visit salary schemes for teachers in public secondary schools to ensure teachers are well paid besides are well paid, teacher promotions should be streamlined and staff development opportunities enhanced.

**Keywords:** Teachers, Teacher Turnover, Job satisfaction, Learning achievement, Biology, Public secondary schools.

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## 1. INTRODUCTION

Research shows that one of the prevailing reasons for high employee turnover is a dissatisfying working environment with salaries being only a minor source of dissatisfaction (Toropova *et al.*, 2020; Ertürk, 2022). Defined in this papers as a state of mind determined by the extent to which the teachers perceive their job-related needs to be met, job satisfaction enhances teachers' 'effectiveness and efficiency at work (Imran, 2017). The European Commission (2018) however recognizes that the increasing teacher turnover rates and a subsequent shortage of qualified and experienced teachers has become a growing concern

globally. According to Cho (2019), turnover among teachers can generally be placed into three categories as *individual related factors* such as age and level of education; *school-related factors* such as job dissatisfaction and unsupportive work atmosphere, and also as a result of *external factors* such as perceptions surrounding teaching job and the influence of teachers' trade unions (e.g. KUPPET and KNUT in Kenya). This study's focus is on job satisfaction as a school related factor influencing teachers' turnover intentions hence the achievement of students in Biology in public secondary schools.

Imran (2017) observes that, studies regarding teachers' job satisfaction and contentment with their places of work have in the recent past gained more attention. The study further expounded that this could be attributed to the recent high teacher turnover rates recorded across countries globally. Imran asserted that teachers were running from class for greener pastures.

According to studies by Ingersoll (2013) and Boe *et al.*, (2017), teachers represent a category of workers globally experiencing shortage issues. The study by Imran (2017) established that teachers' shortage issues are primarily caused by high levels of turnover, which Ingersoll (2013) defined as "the departure of teachers from their teaching jobs". Ingersoll (2013) further stated that research into teacher retention often focuses on the three groups of teachers known as *stayers*, *movers* and *leavers*. Stayers according to him are the teachers who decide to remain in the profession at their current work site. Movers are a category of teachers that hop from one school to another while leavers constitute those who leave the teaching profession altogether in search of other job opportunities (Ingersoll, 2013). Whether stayers, movers or leavers, according to the study, teacher turnover obstructs the instructional process in schools thereby impacting negatively on the learning achievement of students.

A recent study by IOL News (2019) puts South Africa as the country in Africa with the highest rate of teacher turnover. According to this report, despite teachers resigning from the teaching profession in droves, the country also has a remarkably large number of stayers. The report further puts learner characteristics and unpleasant school working environment among the strongest motives pushing teachers to seek alternative employment opportunities. In Tanzania, a study by Demis and Debritu (2020), found that many educators were leaving the teaching profession for other well-paying job opportunities as a result of job dissatisfaction, too much paper-work and uncondusive learning environment thus lowering the quality of education in the country. Unfair school management, school location and accessibility, inadequacy of salary and lack of training opportunities were cited among many other factors as the major contributors to teachers' turnover which consequently lowers the learning achievement of students.

Effective classroom instruction in Biology or any other certified discipline requires the expertise of qualified, experienced and contented teachers of any gender. Such educators according to OECD (2012) have better content delivery and excellent skills in class management due to their exceptional subject mastery and confidence in instructional strategies which is ideal for enhanced student learning achievement. However, in spite of several applicants scrambling for teaching jobs, there is an increasingly reported case of teacher absenteeism, low morale and high desire by majority of

them to shift schools or exit the profession a few years into employment (Onwonga, 2018).

Studies by Isaac *et al.*, (2015) and Demis and Debritu (2020) as well as a report by IOL News (2017) have established positive correlations between teacher turnover and low learning achievement among students. According to Saeed *et al.*, (2014), teacher turnover intention leads to the actual turnover and it is likely to initially reflect low-level job satisfaction which affects teacher's performance, effectiveness and productivity. Accordingly, Helman (2017) opines that high rate of turnover among highly-productive teachers is costly to affected schools. The study further details that besides obstructing the implementation of planned curriculum; it results to inadequacy of teaching staff which immensely and negatively affects effective delivery of subject content to learners leading to dismal performance. From the foregoing discussion, the current study aims to evaluate teacher job satisfaction of turnover on student learning achievement in Biology in public secondary schools in Garissa County.

## 2. LITERATURE REVIEW

This section grounded on the human capital theory of occupational choice highlights job satisfaction elements of teacher turnover including teachers' salary, promotion prospects and work environment and how the same influence the learning achievements of students in Biology in public secondary schools.

### 2.1 Human Capital Theory of Occupational Choice

The Human Capital Theory of Occupational Choice (HCTOC) proposed by Becker (1962) provides a framework for an understanding of some underlying factors that may contribute to an individual's decision to become a teacher, remain in the teaching profession or leave. It addresses turnover intentions among teachers and was instrumental in addressing the objective of this study. The theory illustrates the relationships between education and training, migration and the search for a new job opportunity in terms of investment and its returns (Becker, 1962). The core principles of Human Capital Theory of Occupational Choice delve on school working conditions and the general teachers' satisfaction with the teaching job.

According to the theory, teachers increase their store of human capital through formal schooling and on-the-job training which includes induction programs and professional development programs. The training as investment in human capital can be labeled as general or specific. General training that accumulates generic human capital can be defined as any training that can be easily transferred to other professions and can increase a teacher's future wages or benefits (Kirby & Grissmer, 1993). In contrast, specific training that builds up institutional-specific human capital can be defined as training which is specific to the school in which an individual teacher teaches or another school he /she

intends to leave for (Kirby & Grissmer, 1993). Such an investment as the teachers' development through training is a great contributor to teachers' job satisfaction.

According to studies by Wright *et al.*, (2014) and Onwonga (2018), every year thousands of Kenyan teachers leave teaching profession due to human capital assets gained through experience and additional education. Their leaving is in line with the Human Capital Theory which asserts that the greater the amount of knowledge and skills accumulated in a job over time from investments in education and job training, the higher one's probability of leaving that occupation and vice versa. Ehrenberg and Smith (2013) postulated that expected utilities from turnover decisions are influenced by entry requirements to the profession and the future benefits: better salary, adequate professional training, promotional prospects, improved working conditions, and job satisfaction. The study expounded that if the current value of the benefits associated with turnover exceeded the costs, the individual teacher is more likely to make a decision to change job.

## **2.2 Teachers' Job Satisfaction of Turnover on Learning Achievement in Biology**

Thorndike and Barnhart (1979) aver that job satisfaction is the fulfilment of job related conditions or desires. It is a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences (Boduszek, 2014). However, according to Ali and Anwar (2021), job satisfaction is defined as an attitude related with an individual's degree of their like or dislike of their current job and is determined by a consequence of various elements such as satisfaction, salary and allowances, promotional prospects and relationships with colleague teachers. The current study defines job satisfaction as a feeling of fulfilment or enjoyment a person derives from a job.

Walker (2014) opines that the growth in demand placed on teachers continue to take a toll on the teaching profession as a result of teacher burnout, stress and unhappiness which may lead to job dissatisfaction. Tracey and Hinkin (2016) argued that numerous studies explaining high attrition rate in teachers is due to majority of the teachers entering the teaching profession with a high intrinsic motivation perception only to be disappointed by meagre pay. Scholars like Morello (2014) and Raziq and Maulabakhsh (2015) argue that educational prosperity of a country is challenged by high teacher turnover rates in schools that are directly related to job dissatisfaction. Tracey and Hinkin (2016) add that teachers' turnover rates are influenced by dissatisfaction within the job environment that reduce their contribution to the job.

Raziq and Maulabakhsh (2015) opine that teachers are satisfied when their expectations or desires are met by their employer. According to the study, satisfied teachers are deemed an effective labor force and

become an important asset for the learning institution's effectiveness in knowledge transmission to learners. To this end, satisfied teachers are more optimistic, show more commitment to work and their students as well as show enhanced academic prowess. According to Tracey and Hinkin (2016), the best predictor of job satisfaction is when the teachers' personal values match those of the employer Dziuba *et al.*, (2020) further posit that the influence of teacher job satisfaction on the students' learning achievement cannot be underestimated.

### **2.2.1 Teachers' Salary of Turnover on Learning Achievement in Biology**

Heathfield (2014) defines salary as a fixed amount of money and compensation paid to an employee by an employer in return for work performed. Literature related to salary and teacher turnover highlights salary as one of the greatest significant components of turnover decisions (Sattar & Ahmad, 2014). According to the study by Miller (2014), majority of teachers rated salary as very important, making it the number one contributor to overall teacher job satisfaction. A study by Mertler (2016) indicated that a significant number of teachers hinted that if provided with the opportunity again, they would not choose teaching as a career. The study also established the number one reason teachers left the profession was in search of a better salary. In this regard, majority of the previous literature revealed that when teachers perceive better and equitable salaries within the institutions of learning, they are less likely to leave the profession (A'yunnissa & Saptato, 2015).

Hasibuan *et al.*, (2019) indicate that unsatisfactory remuneration practices lead to increase in turnover intentions among teachers, making salary satisfaction a primary concern to both Teacher Service Commission and school boards of management. Kelly (2014) demonstrated in his analysis how a salary increase caused a significant turnover decrease among teachers and led to significant increase in academic scores in students.

### **2.2.2 Teachers' Promotion Prospects of Turnover on Learning Achievement in Biology**

According to Kinyili *et al.*, (2015), a job promotion is when an employer moves a teacher up in the hierarchical levels within a learning institution. It typically allows a teacher to progress to higher position, a higher level of responsibility and higher levels of authority within the school. Kinyili *et al.*, (2015) posit that promotion enables teachers to occupy senior positions within the learning institutions. Studies that link teacher promotional prospects and turnover agree that teachers' intent to leave are less among teachers who work for schools and teacher employers that are perceived to have organized career growth.

However, Ekabu (2018) stated that teachers' promotion in Kenya is an uphill task for a majority of classroom teachers in schools lacking adequate

infrastructure and learners with high academic achievement. Kinyili *et al.*, (2015), further submits that if teachers stagnate in one position for a considerable length of time, they will unlikely stay in such schools and unfulfilling positions.

In Kenya, teachers' promotions are governed by the laws and regulations from the teacher employer TSC, however, the way the exercise is implemented has left many educators disillusioned (Kipkebut, 2015). Kinyili *et al.*, (2015) reiterated that when a teacher stagnates in one position for long, he or she is unlikely to stay in such unfulfilling institution or job. The study supposed that when teachers stagnate in their current positions, their motivation to stay in such positions usually fades and would most certainly not remain in such unfulfilling positions.

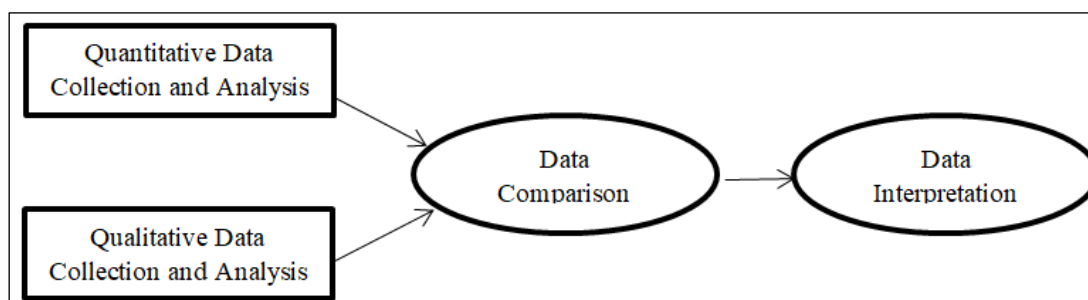
### 2.2.3 Teachers' Work Environment of Turnover on Learning Achievement in Biology

According to Herati *et al.*, (2021), good learning environment benefits learners by providing them with appropriate instructional tools, space and facilities for learning process. The study stated that a suitable classroom environment should be one that is more congenial for learners, supports learning and motivates students in enhancing their perception towards instructional process. Unconducive work environment

such as unprofessional administration, lack of support from parents and surrounding community, overload of paperwork and undisciplined students may lead to job dissatisfaction thus triggering teacher turnover.

### 3. MATERIALS AND METHODS

This study adopted the pragmatic worldview research paradigm. This philosophy arises out of actions, situations, and consequences and its premises are concerned with applications on what-works and solutions to problems (Patton, 2013). According to Creswell and Plano (2018), pragmatism provides a philosophical basis for mixed methods *research* which was applicable in this study. With pragmatism paradigm, inquirers draw liberally from both quantitative and qualitative assumptions and are free to select the methods, study techniques, and procedures that best accommodate their needs and purposes. The mixed methods research approach was preferred because of its strength of drawing on both qualitative and quantitative research and minimizing the limitations of using either of the approaches (Creswell & Creswell 2018). Specifically, convergent mixed method design was used as it aimed at converging both quantitative and qualitative data concurrently collected to provide a comprehensive analysis of the research problem (Creswell & Creswell, 2023). This is illustrated in Figure 1.



**Figure 1: Convergent Research Design**  
Source: Creswell & Creswell, 2018

This study was conducted in Garissa County, one of the 47 counties in the Republic of Kenya and targeted all Form Three Biology students and the Teachers of Biology who were teaching Biology in form three class at the time of study. According to the Ministry of Education data of 2023, Garissa County had 2691 form three students and 95 teachers of Biology drawn from 40 registered public secondary schools. First, the study adopted stratified sampling technique in dividing the population into categories based on their demographic designation so as to ensure equitable

representation of the population in the sample (Kothari & Garge, 2014). All the sub county public secondary schools in the study area were then purposively selected. The sample size therefore constituted a purposive sample of all the Biology teachers since they are believed to have the most reliable information in relation to the study topic. On the other hand, form three students were considered in the study to ensure the participation of students who have been exposed to both Form One and Form Two Biology content and had chosen to pursue Biology to KCSE level.

**Table 1: Target Population and Sample Size**

Respondents	Target Population	Sample	Percentage
Teachers of Biology	95	51	53.0%
Form Three Students	2691	336	12.5%
Total	2786	387	65.5%

Source: Field Data, 2023

The form three students' were estimated based on Krejcie and Morgan's (1970) formula as shown below.

$$n = \frac{X^2 * N * P * (1-P)}{(ME^2 * (N-1)) + (X^2 * P * (1-P))}$$

Where :

n = sample size

$X^2$  = Chi - square for the specified confidence level at 1 degree of freedom

N = Population Size

P = population proportion (.50 in this table)

ME = desired Margin of Error (expressed as a proportion)

$$n = \frac{1.96^2 \times 2691 \times 0.5 \times 0.5}{0.05^2 \times 2690 + 1.96^2 \times 0.5 \times 0.5}$$

$$n = \frac{2584.4364}{6.728 + 0.9604} = \frac{2584.4364}{7.6884}$$

$$n = 336$$

Thus, a total sample of 387 participants was used in this study and comprised 51 teachers of Biology and 336 form three students. The study adopted questionnaire and document analysis guide to generate detailed data of job satisfaction on the influence of teacher turnover intentions on student learning achievement in Biology.

Quantitative data from the Biology Teachers' Questionnaire was analyzed by descriptive and inferential statistics using Pearson Product Moment Correlation and Linear Regressions. Lau (2018) argue that inferential statistics involve using a randomized data sample from a population to make inferences about it. Sunder's *et al.*, (2016) posits that Pearson Product Moment Correlation Coefficient measures linear relationship between two variables. Data from document

analysis guide and open ended questions from Biology Teachers' Questionnaire were analyzed qualitatively.

#### 4. FINDINGS AND DISCUSSION

Of the administered questionnaires, 49 out of 51 questionnaires were returned. This figure corresponds to 96.08% of the study participants. From document analysis guide, 100% response rate was obtained from all the 336 form three students. This response rate according to Creswell (2012) was deemed significant for the study. Mugenda and Mugenda (2019) opine that a response rate of 50% is adequate, 60% is good and 70% and above is very good. Based on this, the average 98.04% response rate attained is deemed excellent to make valid and most reliable conclusions for the study.

**Table 2: Turnover Intention Rates among Teachers**

Turnover Intention Rate	Frequency	Percentage
Low (1-10 %)	01	02.0
Moderate (11-30 %)	07	14.3
High (31-50 %)	23	46.9
Very High (51 % and Above)	18	36.7
<b>Total</b>	<b>49</b>	<b>100.0</b>

In regards to whether Biology teachers in public secondary schools in Garissa County planned to either transfer from their current schools or quit teaching entirely, their turnover intention rates were assessed. The findings show that majority of teachers admitted to have

high 23(46.9%) and very high 18(36.7%) intention rates to transfer to other schools or leave teaching career. However, a small fraction of the teachers 1(2.0%) and 7(14.3%) showed low and moderate turnover intention rates respectively.

**Table 3: Summary of Sampled Schools' KCSE Biology Mean Scores; 2016-2019**

Year	2016	2017	2018	2019
No. of Schools	25	26	26	27
KCSE Biology Mean Scores	2.3721	2.1957	2.6436	2.3238
Std. Deviation	0.67043	0.46271	0.54218	0.53125

*Source: Field Data, 2023*

The above study results (Table 4.14 and Table 4.15) at a glance shows a comparison of both KCSE overall mean scores and KCSE Biology mean scores the sampled schools in the study site obtained for the years

2016-2019. The results indicate a deteriorating trend of learners' scores in Biology. The study finding shows that the schools' KCSE mean-scores were slightly greater than the Biology mean score. The descriptive statistical

analysis using a five-point Likert scale was employed where; Strongly Disagree=1, Disagree=2, Undecided=3, Agree=4 and Strongly Agree=5. Table 4 shows summarized findings on how the teachers of Biology

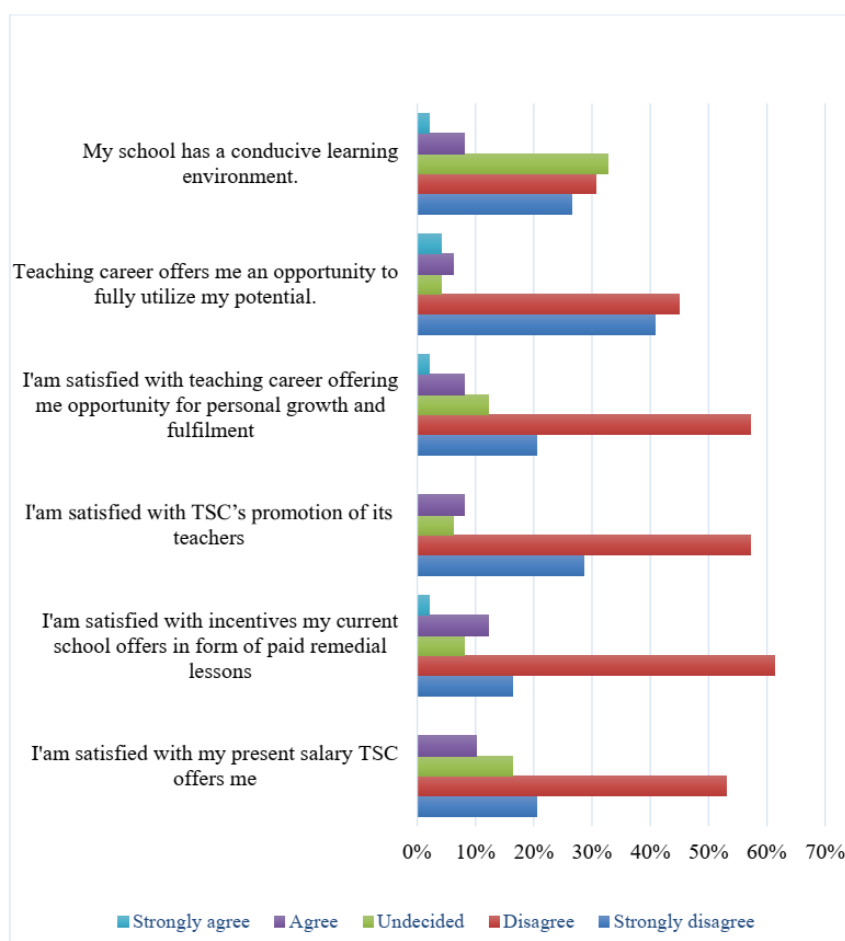
from public secondary schools in Garissa County responded to the questions. The findings were supplemented by the qualitative data from document analysis guide for the purpose of data triangulation.

**Table 4: Influence of Job Satisfaction of Teachers' Turnover Intention on Learning Achievement in Biology**

Statements	SD (%)	D (%)	U (%)	A (%)	SA (%)	M	SD
19. I' am satisfied with my present salary TSC offers which encourages me to effectively teach Biology	10(20.4)	27(55.1)	7(14.3)	7(14.3)	0(0.0)	2.15	0.87
20. I' am satisfied with incentives my current school offers in form of paid remedial lessons which motivates me to effectively teach Biology	7(14.3)	31(63.3)	4(8.2)	6(12.2)	1(2.0)	2.23	0.94
21. I' am satisfied with TSC's promotion of teachers which encourages me to effectively teach Biology	14(28.6)	27(55.1)	3(6.1)	5(10.2)	0(0.0)	1.98	0.83
22. I' am satisfied with teaching career offering me an opportunity for personal growth and fulfilment which motivates me to effectively teach Biology	11(22.5)	26(53.1)	7(14.3)	4(8.2)	1(2.0)	2.13	0.91
23. Teaching career offers me an opportunity to fully utilize my potential. This encourages me to effectively teach Biology	21(42.9)	22(44.9)	2(4.1)	3(6.1)	1(2.0)	1.79	0.95
24. My school has a conducive learning environment which enables me to effectively teach Biology.	14(28.9)	14(28.9)	16(32.9)	4(8.2)	1(2.0)	2.26	1.02
<b>Average Mean and SD</b>						<b>2.10</b>	<b>0.92</b>

Source: Research Data, 2023

Legend: Strongly Disagree = SD, Disagree = D, Undecided = U, Agree = A, Strongly Agree = SA, Mean = M, Standard Deviation = SD.



**Figure 2: Influence of Job Satisfaction of Teachers' Turnover on Learning Achievement in Biology**

The items under the third study objective sought to evaluate to which extent job satisfaction of teacher's turnover has influenced learning achievement in Biology in public secondary schools in Garissa County.

With reference to Table 4, the majority of teachers of Biology, represented by 37(75.5%) disagreed when asked whether they were satisfied with their present salary TSC offered them. However, 7(14.3%) agreed with 5(10.2%) remaining undecided. The mean rating for this item was 2.26 and had a standard deviation of 0.87 implying that the teachers of Biology in Garissa County were predominated with those who were dissatisfied with the salary their employer paid them. Research has shown a direct correlation between teachers' pay and learners' academic achievement OECD (2012). Therefore, this feeling of discontentment concerning low salary coming from educators is bound to demotivate them and affect their commitment which results in reduced vigor and effectiveness in teaching of Biology.

When required to indicate whether they were satisfied with incentives their current schools offered them in form of paid remedial lessons, 38(77.6%) of teachers of Biology disagreed while 7(14.2%) agreed with 4(8.2%) being undecided. The mean and standard deviation for the item was 2.24 and 0.94 respectively implying that majority of the schools the teachers taught never extrinsically motivated them to encourage them effectively teach Biology. Beyond a reasonable salary, studies by Bennell and Akyeampong (2017) and A'yuninnisa and Saptato (2015), have shown that further pay to teachers in form of incentives increases their job satisfaction and retention.

These findings match those got from the document analysis guide. The records from the principals' offices revealed that a large number of teachers had applied for transfers to be moved from their current schools to other schools they perceived better in terms of teacher motivation. Data from the documents as well revealed that majority of the teachers on several occasions had sought for recommendation letters from the heads of their institutions, at times requesting them to be their professional referees whenever they applied for alternative jobs perceived better than teaching. This implies unsatisfactory remuneration practices lead to increase in turnover among teachers, making salary and incentives a primary concern in teaching profession. This conforms to the suggestions of Human Capital Theory which elaborates that monetary benefits from the teaching profession can be viewed as returns on investment in education hence affect teachers' job satisfaction, increase work commitment and make them more productive and retained.

These findings show that majority of the teachers of Biology in public secondary school in Garissa County were dissatisfied with teaching profession

because of the perceived low salary from TSC and incentives gotten from their schools. The finding is consistent with Miller (2014) who established that majority of teachers rated salary as very important, making it the number one contributor to overall teacher job dissatisfaction. The finding is also in consonance with Mertler (2016) who indicated that a significant number of teachers hinted that if provided with the opportunity again, they would not choose teaching as a career. This notion of the perceived salary discrepancy of teachers and other government employees is affirmed by Kamau *et al.*, (2020). The studies asserted that increases in teacher salary causes a significant decrease in turnover intention leading to significant increase in student academic achievement.

The descriptive results also indicate that 41(83.7%) of the teachers disagreed that they were satisfied with TSC's promotion of teachers while only 5(10.2%) agreed. A less significant figure; 3(6.1%) of the teachers remained undecided. The item had a mean rating of 1.98 and standard deviation of 0.83. This indicates that majority of the public secondary school teachers in Garissa County were dissatisfied with Teachers Service Commission's promotional prospects. Promoting teachers based on their length in service and performance encourages them to stay in profession and continue developing their skills essential for improved students' learning achievement. This finding is supported by qualitative data collected using the Document Analysis Guide which revealed that a significantly large number of teachers in sampled schools were still in lower job groups despite evidence showing that they had applied and even attended promotional interviews severally. When teachers stagnate in one job group for a considerable length of time, they get demotivated and this reduces their commitment and productivity making them less effective in teaching.

Similarly, on whether they were satisfied with teaching career offering them opportunity for personal growth and fulfilment, the majority of teachers of Biology represented by 37(75.6%) disagreed while 5(10.2%) agreed. However, 7(14.3%) were undecided affirming that Biology teachers' dissatisfaction with their career is a hindrance to effective classroom instructional process in the subject (Mean= 2.13, SD=0.91). Stated differently, the teachers' perception that teaching as a profession does not offer them opportunity for self-actualization discourages them to fully engage in effective teaching process, essential for enhanced student learning achievement in the subject. This finding is in agreement with Ekabu (2018), who stated that teachers' promotions based on performance is an uphill task for the majority of classroom teachers in most sub county day schools lacking adequate infrastructure and learners with high academic achievement. Finally, the study result agrees with the views of Kinyili *et al.*, (2015) who opined that a teacher would feel more satisfied to work with an

employer who provides him/her with promotional prospects to new challenging positions.

Asked to indicate whether teaching as a career offered them opportunity to fully utilize their potential, the statistical results show that 43(87.8%) of the teachers disagreed while a paltry 4(8.2%) agreed with 2(4.1%) remaining undecided. The study item had a mean of 1.79 and a standard deviation of 0.95 implying that majority of teachers of Biology from public secondary schools in Garissa County disregarded teaching since it did not offer them opportunity to fully utilize their potentials. This perception of the subject specialists affects their job commitment and may affect their teaching strategies in Biology, reflected by low learning achievement in the subject.

Finally, when asked whether their schools had favorable learning environment for Biology instruction, the descriptive results indicate that 27(57.8%) of the teachers of Biology disagreed while only a less significant 5(10.2%) agreed. The item's mean score was 2.26 and had a standard deviation of 1.02 implying that most schools the teachers taught had uncondusive learning environment unsuitable for Biology instructional process. Stated differently, the school workplace atmosphere was hostile as witnessed by the researcher during data collection. The afternoon temperatures were scorching hot with dusty wind blowing all over. "Mathenge" (thorny) trees grew all over the school compounds mostly littered by animal wastes. Most schools lacked gated fences thus animals and people could come in and leave at any opening.

This finding is in line with the data collected using the Document Analysis Guide which revealed that a significantly large number of teachers both male and female had fled the County in February 2020 as a result of insecurity and dissatisfaction with the school work conditions. The Biology course books for a few sampled learners depicted content disorganization. The books showed that majority of the teachers of Biology did not organize the learning activities following topical content or used updated and summarized notes as per the requirements of both KICD and KNEC syllabi and schemes of work. The sampled books showed that the Biology content taught was scanty, disorganized and

scattered. The learners' course books were unchecked and did not have any lesson quizzes as a proof that effective evaluation of the learning outcome in the subject had been taking place.

Moreover, the findings are in line with a study by Emeka *et al.*, (2012) which established that the greater the job satisfaction rate in teachers, the less likely is the turnover. This confirms literature that teachers with high levels of job satisfaction hold positive attitude toward the jobs and will retain their jobs and produce good results. Finally, the study results concur with those of Tracey and Hinkin (2016), as seen in the literature review that the best predictor of job satisfaction and career fulfilment is when teachers' personal values match those of the employer.

These findings are also supported by Raziq and Maulabakhsh (2015) who described a satisfying learning environment as the school atmosphere that is fulfilling and adds value to the instructional process. The study results also agree with Ayuninnisa and Saptoto (2015), and Dziuba *et al.*, (2020) who demonstrated that when teachers perceive their school learning environments as being supportive, they are more likely to feel positive and motivated in providing quality teaching services. The average mean for the teachers' job satisfaction of turnover intentions on their effectiveness in classroom instruction in Biology is 2.10 with a standard deviation of 0.92. This implies that the efficiency with which the teachers in selected public secondary schools engage in the teaching process in Biology is influenced by the extent of their job satisfaction.

The hypothesis was tested using Pearson Product Moment Correlation at an alpha level of 0.05 and degrees of freedom of 47 (49-2).

*H<sub>01</sub>: There is no significant relationship between job satisfaction of teachers' turnover and learning achievement in Biology*

Specifically, the author's interest was in finding out the existence of any relationship between the job satisfaction of teachers' turnover (Mean = 2.10, S.D = 0.920) and learning achievement in Biology (Mean = 1.95, S.D = 0.879). The computation output is shown in the Table 5.

**Table 5: Pearson's Correlation Analysis between Teachers' Job Satisfaction and Learning Achievement in Biology**

Correlations		Teachers' Job Satisfaction	Learning Achievement
Teachers' Job Satisfaction	Pearson Correlation	1	.67**
	Sig. (2-tailed)		.000
	N	49	49
Learning Achievement	Pearson Correlation	.67**	1
	Sig. (2-tailed)	.000	
	N	49	49



From the Table 5, the observed r-value is .67 while the p-value is .000. An r-value of .67 indicates a moderate positive relationship between the teachers' job satisfaction and the learning achievement in Biology. The implication of the study result is that learning achievement in Biology in study area is influenced by the state of the teachers' job satisfaction. The p-value of .000 is less than the alpha level of .05, providing evidence against the stated null hypothesis which is consequently rejected in favor of the alternate hypothesis; stated as

there is significant relationship between job satisfaction of teachers' turnover and learning achievement in Biology in public secondary schools.

Multiple linear regression was performed on the data taking learning achievement in Biology as the dependent variable and teacher job satisfaction as individualized independent variable. The model summary is presented in Table 6.

**Table 6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.764 <sup>a</sup>	.584	.554	.26893	.584	19.194	3	41	.000

The Model Summary obtained from the test above indicates that 58.4% of the variability in learner's achievement in Biology can be explained by the independent variable job satisfaction of turnover intentions. In the test for Analysis of Variance (ANOVA),

the findings ( $F(3, 41) = [19.194]$ ,  $p = .000$ ) indicate that there is statistically significant relationship between job satisfaction of teachers' turnover on students' learning achievement in Biology in public secondary schools in Garissa County.

**Table 7: ANOVA Test**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.165	3	1.388	19.194	.000 <sup>b</sup>
	Residual	2.965	41	.072		
	Total	7.130	44			

The regression coefficients in Table 8 establish the contribution of job satisfaction to the variation in learning achievement in Biology.

**Table 8: Regression Coefficients**

Model	Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.032	.215		4.797	.000
	Teachers' Job Satisfaction	-.131	.190	-.278	-.685	.012

The general model equation from the results in Table 8 is given by:

$$Y = 1.032 + .211X_1 + .194X_2 - .131X_3$$

$$Y = 1.032 - .131X_1$$

From the study hypothesis:

*H<sub>01</sub>: There is no significant relationship between job satisfaction of teachers' turnover and learning achievement in Biology n public secondary schools*

( $t(47) = -.69$ ,  $p = .012 < .05$ ) is significant, therefore the null hypothesis was rejected. The indication of this result is that an increase of one unit in job dissatisfaction of teachers' turnover causes a change of -.131 or -13.1 % in learning achievement in Biology.

## 5. CONCLUSION

Majority of the teachers of Biology in public secondary schools in Garissa County were dissatisfied with the teaching career as well as the learning environment (Mean = 2.10, S.D = 0.920) which

influenced their turnover. As a result, there was reported low learning achievement in the Biology subject. The streamlined teacher promotions, low salary and incentives as well as limited opportunity for growth were cited as major factors contributing to teachers of Biology job dissatisfaction.

## 6. RECOMMENDATIONS

- The TSC and the schools' management in Kenyan public secondary schools should ensure teacher job satisfaction since it has an effect on teachers' turnover. They should re-visit salary schemes for teachers in public secondary schools to ensure teachers are well paid besides putting in place other attractive human resource practices such as ancillary incentives to reduce teachers' turnover in order to avoid costs incurred in frequent employment and induction of new teachers.
- Moreover, the teacher promotions should be fast tracked, streamlined and made clearer, appealing and automatic depending on the teacher's academic

qualification to allow the most educated, qualified and experienced teachers to be retained. The government through TSC should regularly organize in-service training curriculum for Biology teachers in order to sharpen and enhance their pedagogical knowledge and skills. This, besides other retention strategies will lead to attitude change and improved instruction in Biology. Quality instruction of Biology, frequent practical lessons and timely evaluation should be the core target in improving the learning achievement in the subject.

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## Declaration of Conflicting Interests

The author declares no potential conflicts of interest with regard to this study, its authorship, and/or publication of this article.

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