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Teachers' Resilience on Students Academic Performance in Public Secondary Schools in Selected Counties Kenya

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Abstract

Teacher Resilient is considered an important aspect of a nation's development. There is however a dearth of literature on the effect of teachers' resilience on students' academic performance in public secondary schools in selected counties in Kenya. The purpose of this study was to establish the effect of teacher's resilience on student's academic performance in public secondary schools in Kiambu and Nairobi counties in Kenya. The study adopted Adversity quotient theory and correlation design. The study sample comprised of 441 secondary school teachers. Data was collected using the Adversity Quotient Profile Questionnaire for teachers. Data was analyzed using Pearson's Product Moment correlation coefficient to test relationships between the variables. Validity was done using cronbach's alpha and coefficient value of 0.7 was established. Gender, length of service and education qualification didn't make any difference in relation to adversity quotient. The results revealed high moderate teachers' resilience level. Further the study revealed a positive and significant relationship between teachers' resilience and students performance in national examination in 2016 (r = 0.462 and 2016 (r = 0.598, P = 0.0001) respectively. The study recommends policy makers to recognize the importance of testing and assessing teachers' resilience, devising appropriate and timely teacher support mechanisms and professional development programmes in order to promotes teachers resilient in for the purpose of raising students' academic performance.

Key words: Kenya; Kiambu; Nairobi Quality teacher; Teacher resilience; Student's academic performance

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Introduction

Over the last decades many   educational systems around the world have taken into account the importance of teacher resilience. The National Association of School Psychologists (NASP, 2015) recognizes the importance of strengthening the teachers' resilience as a way of overcoming the shortcomings of deficit-based approaches. Resilience is defined as the ability to resist and overcome challenges (Sammons et al., 2007); Beltman, Mansfield, & Price, 2011) while (Tait, 2008) states that it is the capacity to interact with events and environment (Beltman (Tait, 2008). Many scholars describe teachers' resilience as a positive predictor of students' academic performance in secondary school (Abolmaali, & Mahmudi, 2013; Jafri, 2013). Acording to (Tait 2008) argue that resilient teachers are intrinsically motivated, optimistic, self-regulated, flexible, and innovative in problem solving, exercise reciprocity, determined, assertive, and communication skills. Resiliency teachers are able to persevere in adverse situations and are flexible to change (Day & Gu, 2007).   Resilience conceptualized as a process rather than an individual trait (Canvin, Marttila, Burstrom, & Whitehead, 2009).

Ungar et al. (2008) carried out a study of youth resilience across diverse disciplines and cultural background. The study comprised of 14 respondents from 11 countries. The purpose of the study was to develop a culturally and contextually relevant measure of youth resilience, the Child and Youth Resilience Measure (CYRM). Factors of resilience comprised of self-efficacy, the ability to live with uncertainty, perceived social support, parenting, provision of teaching and learning material, social competence, good interpersonal relationships, social justice, access to education, and social cultural dimensions. The study used Cultural sensitivity and an interactive research design. The study revealed ambiguity in the definition of positive outcomes, a lack of predictability of models across cultures and measurement design challenges. However, the study did not focus on academic performance.

In a university setting, on the effects of teachers' resilience Kwek, Bui, Rynne and So Kam Fung (2013) present resilience and self-esteem as strong predictors of academic performance. In a wider view, sustaining resilience in school may also affects students themselves by reducing the presence of depression or anxiety, thereby positively influencing possible academic performance, as well as well–being of students now and in the future (Challen, Machin, & Gillham, 2014).

Musili in (2015) conducted a study on teacher factors influencing students' academic performance and the findings revealed the importance of teachers on matter most regarding students' academic performance regardless of the students' socioeconomic status and even school location. Studies by Qing and Qu (2013) argued that students interacting with a high resilient teacher have positive gains in academic progress for years to come. He argues that resilient teachers are not limited by any condition or challenge they face at work they are able to bounce back and wither every storm. Various research studies reveal that factors such cognitive

ability, subject matter knowledge, teaching skills, teacher experience in teaching, teacher behavior in class are all related to teacher quality and increase students' academic performance (Hassan, 2017).

Andre´s Sandoval-Herna´ndez and Piotr Białowolski (2016) carried out a study on factors and condition that academic resilience in five Asian education systems. The objectives of this article are dual: firstly, to identify factors and conditions associated with academic success, regardless of student SES, and secondly, to identify factors and conditions associated with academic resilience, that is, exclusively for low-SES students. The study sample covered 23,354 students in 720 schools in the five countries. The analysis was done using regression models. The study revealed that positive student attitudes, teacher confidence in student performance and the language spoken at home, were associated with greater chances of academic success. High academic expectations and time spent in learning at home demonstrated a differential effect between disadvantaged and non-disadvantaged students. Gender and low levels of bullying at school increased the likelihood of resilience. Results suggested that interventions impacting behavior reflected in differentially associated variables could help disadvantaged students to become academically resilient.

Mwangi, Okatcha, Kinai, Ireri (2015) carried out a study on Relationship between Academic Resilience and Academic Achievement. The study employed descriptive correlation design. The sample comprised of 390 form three students. The participants' were classified into low, average, or high levels of academic resilience and academic achievement. The cut-off scores for low, average, and high levels of academic resilience were 56-113, 114-171, and 172-229 respectively. The cut-off scores for low, average, and high levels of academic achievement were 0-39, 40-59, and 60 and above respectively. Data was analysed using Pearson's Product Moment Correlation Coefficient and regression analysis. The results indicated that majority of the participants had moderate levels of academic resilience (55.10%) and academic achievement (64.36%) Findings revealed a significant relationship between academic resilience and academic achievement (r (388)=0.68, p<0.05). A significant regression equation was found (F=85.22, p<0.05) with R 2=0.57. The study recommended teachers to embrace promote academic resilience in order to developing more resilience in students has many positive consequences.

Studies that relate students' academic performance and teacher characteristics, including teacher academic qualification, have produced inconsistent evidence that students performance is better when their teachers have better or higher academic qualifications (Day et al, 2010). Previous researches that have related student's achievement and teacher characteristics of age, gender, qualification and experience seem to agree that teacher quality affected student academic performance (Day & Gu ,2010;Edwards,2011: Qing & day, 1013; Musili,2015).

Many people emphasis the importance of good teachers and many government policies are designed to promote the teacher quality. Research using student test scored on standardized examinations confirm the perception that some teachers are more effective than others (Day et al,. 2011). According to Hassan, (2017) students being taught by an effective teacher are more likely to perform better academically than those taught by less effective teachers. Teachers matter more to students' academic performance than any other aspect of schooling. Many

researchers have found that factors contributing to students' academic performance are many ,including students individual characteristics, family background ,neighborhood experiences, school culture and leadership but almost all of them agree that among the school related factors , teachers matter most (Hassan, 2017). When it comes to students' academic performance a teacher is estimated to have two or three times the impact over any other school factor such as facilities, school culture and leadership. Some studies have suggested that compared to teachers the students individual characteristics and family background may have four to eight times impact on students' academic performance (Qing et al,. 2013). Policy discussions focus on teachers because it is easier for public policy to improve teachers work behavior than to change students' personal characteristics and family circumstances.

Effective teachers are best identified by their students' performance and not their professional qualification and work experience (Day et al,. 2011). There is a common perception that effective teachers cannot be reliably be identified based on where they went to school, their credentials or their experiences. The best way to assess teachers' effectiveness is to look at their students' performance including what they do in the classroom and how much progress their students make on achievement tests (Hunderson, 2003). This has called for more polices that require evaluating teachers on the job performance based on part on evidence about the students learning (TSC, 2016). Effective teachers tend to remain effective even when they change schools. Recent evidence suggest that a teacher's impact remain reasonable consistent even when they left one school to another regardless of whether the new school was more advantaged or less advantaged than the previous one (Day et al., 2011). Odhiambo (2010) contends that there is a growing demand from the Kenyan government and the public for teacher accountability in students' performance due to deteriorating performance in Kenya Certificate of Secondary Education (KCSE). Schools are commonly evaluated using students and teachers cannot be disassociated from the schools they teach and academic results of the students. Teachers celebrate and are rewarded when their schools and subjects are highly ranked. According to Yala and Wanjohi (2011) and Musili (2015) Kenyan teachers who excel in their subjects are rewarded during open days and also teacher promotion by the teacher employer highly recognizes students' performance. This study sought to establish teachers resilience level and the impact of that level on their students' academic performance and also if there significant difference in teacher resilience levels in regard to gender, educational qualification and length of service, in public secondary schools in Kiambu and Nairobi counties in Kenya.

Statement of the Problem

Excellent academic grades are the main concern of educationist, education stakeholders and policy makers. Today more focus is on accountability, curriculum reforms and teacher quality. It has been generally agreed that the most important manifestation of quality education has to do with cognitive abilities and progression to higher learning institution. In Kenya examinations are the only acceptable measures of one's academic performance (Maiyo, 2009). The performance of students in secondary schools in Kenya has been deteriorating over the last decade with less than half of the students transiting to higher institutions of learning and majority of the candidates

scoring below the D grade. Kiambu and Nairobi counties in Kenya despite hosting majority of the national schools in the country enjoying accessibility to modern technology and good infrastructure network than other counties have been registering deteriorating KCSE results over the last decade; their results in the last three years between 2014-2016 are evidence as shown below:

Table 1: KCSE Performance in 2014 -2016

	National KCSE index	Nairobi KCSE index	Kiambu KCSE index
2014	30.8% C+ and above	30.48% C+ and above	26.15% C+ and above
2015	31.5% C+ and above	31.85% C+ and above	27.9% C+ and above
2016	10.8 % C+ and above	9.8% C+ and above	8.4% C+ and above

Source: KNEC analysis.

Teachers play a crucial role in students' academic performance. The factors affecting teachers' performance of their duties affect the students' academic performance. Local studies by (Mwangi, 2015, Odhiambo 2010, Mwangi, 2013) addressing factors influencing students' performance didn't focus on teachers' resilience as a factor influencing students' performance. This study therefore sought to investigate the impact of teachers' resilience level on students' academic performance in public secondary schools in Kenya.

Objectives of the Study
The study focused on the following objectives:
1. Determine teachers' resilience according to gender, academic qualification and length of service?
2. Determine teachers' resilience levels using adversity quotient profile
3. To establish the impact of teacher resilience level on students' academic performance in 2015 and 2016

Teacher resilience
Teacher resilience refers to the process, capacity, and outcome of positive adaptation as well as ongoing commitment and growth in the face of challenging circumstances. Resilience is shaped by the individual, situation and the broader characteristics that interrelate to in dynamic ways to provide risk factors. Individuals drawing from personal and professional resources not only bounce back but also thrive professionally and personally experiencing professional satisfaction, positive self-beliefs, personal well-being and ongoing commitment to their profession. Why some people are able to deal with stains and stress better than others is a subject of research. Teachers who are described as resilient are able to recover from frustrations and maintain commitment to their profession and therefore maintain their effectiveness (Edward, 2011).

Although among students' resilience has been studied by researchers from multiple disciplines, there is limited empirical work on teachers resilience (Day et al, 2010). The concept of resilience originated from the discipline of psychology as a result of addressing issues of

children classified as being at risk of having negative life outcomes into helping them to adopt positively despite significant adversities (Day et al,. 2011). There after the concept gained prominence among other people who struggled through in adopting to new changes (Day et al,. 2011). In the last two decades resilience research has developed to address factors that may contribute to positive outcomes in work or life. Resilience is a multi-dimensional construct. As a psychological construct it is concerned with positive emotions of joy, contentment and love (Day, 2010) and contributes to understanding the nature of teaching that is emotional in its nature (Niet, 2003). Teaching is not just about knowing the subject content one teaches and having the correct competence. Good teachers are emotional, passionate beings who connect with their students and fill their class with pleasure and creativity, challenge and joy.

On the other hand resilience is also a social construct. Although all people are all born with biological capacity to be resilient, the capacity to be resilient in different negative circumstances be it personal or professional circumstances can be enhanced or inhibited by the nature of different settings in which we work, the people with whom we work with, and our beliefs and aspirations in life (Day ,2011).This implies that resilient qualities can be learned and improved through provision of relevant and practical proactive factors such as caring, attentive educational settings, positive and high expectations, positive learning environments, supportive community and supportive peer and administrative relationships (Oswald et al., 2003). Resilience is therefore a developmental and dynamic construct, connoting the positive adaptation and development of individuals in the presence of challenging circumstances. Teaching in the 21st century has been dominated with successive and persistent curriculum and government policy reforms. The changing conditions in which students learn and teachers teach have become very stressful. Combined with the government pressure on teachers to perform by posting exemplary results in national examinations in Kenya, the teachers' work has become extremely difficult to handle. This paper sought to determine the impact of teachers' resilience on students' academic performance in public secondary schools in Kenya.

Methodology

This study adopted a correlation research design using stratified random and systematic random sampling to select a sample of teachers. According to Mugenda (1998), a sample size of 10-30 % is adequate and therefore, the researcher chose a sample size of 30%. An adversity quotient (AQ) questionnaire developed by Paul Stoltz in (1997) was used in data collection. According to Stoltz adversity quotient is widely used to strengthen human resilience. This study used adversity response profile questionnaire (ARP) of Dr. Paul G. Stoltz (2010) version 8 to measure teachers' resilience. Adversity quotient is made up four dimensions abbreviated as (CORE): C stands for control and is the degree to which teachers believes they can influence a challenge they face, O stands for ownership and is the probability that teachers will actually do something to improve the challenges at hand regardless of the formal responsibilities. R stands for reach which is the degree to which a teacher believes that adversity will affect other aspects of their life. E for endurance is the length of time the teacher believes the adversity will last, either for a long time or short duration. A teacher AQ was calculated from the four dimensions which are represented

by the acronym CORE, which stand for: C=control; O=ownership; R=reach; E=endurance. AQ is mathematically represented as:

$C + O_2 + R + E = AQ$

$O_2 = O_r + O_w$

O_r = score of ownership scale (origin)

O_w = score on ownership scale (ownership)

Below is the descriptive interpretation of the scores by Stoltz, 2009.

Overall AQ Score Equivalent; High 177-200, Above Average 165-176, Average 145-164, Below Average 134-144 and finally Low AQ scores ranges from 0-28

Theoretical Framework

This study is underpinned in the Adversity quotient theory. This is the discipline concerned with human elasticity or toughness. According to (Stoltz, 1997), individuals who effectively apply Adversity Quotient when faced by challenges, big or small succeed. Actually, they don't only learn from such challenges, but they encounter them better and quicker. Adversity Quotient has been applied in business organizations and indicated that a high-Adversity Quotient personnel was transformed to competent, productive, innovative, committed and motivated employees (Stoltz, 1997). Stoltz found that several individuals have a high Intelligence Quotient and all characteristics of Emotional Intelligence; nonetheless they fall terribly below their potential. Neither Intelligence Quotient nor Emotional Intelligence seems to explain one's success. Nevertheless, both play a role in someone's success. The question remains, however, why do some people persist while others – perhaps equally brilliant and well-adjusted – fall short and still others quit? Adversity Quotient answers this question. According to Stoltz, success in work and life is largely determined by adversity quotient (AQ) more than other human characteristics.

An individual's Adversity Quotient (AQ) is made up of four elements- CO2RE. These elements are: Control; Ownership and Origin; Reach; and Endurance. CONTROL, is the perception that, something CAN be done. It regulates how and to what level an individual will act when confronted by adversity. This theory is appropriate in this study because it explains why some people persist and succeed beyond their IQ and EQ. Schools in the 21st century are faced with many adversities which teachers must handle and this theory can help teachers increase their abilities to handle adversities and improve their performance and that of their students.

Results

Table 1: Distribution of Respondents by Gender and Resilience Level

Gender	Frequency (f)	Percentage %	AQ	Description
Male	126	39.9	150	Average
Female	261	59.2	162	Average
Unidentified	4	0.9	145	Average
Total	**441**	**100**	**200**	_

The results of Table 1 Majority indicate that there were more female teachers 59.2 % compared to their male colleagues of 39.9 % but all of them had an average resilience level. So we may conclude that a person's resilience is not affected by their gender.

Table 2: Teachers Educational Qualification and Their Resilience Level

Qualification	frequency (f)	percentage %	AQ	Description
PhD	-	-	-	-
Masters' degree	27	6.1	164	Above av.
Bachelor's	400	90.7	155	average
degree	14	3.2	160	average
Others.				
Total	**441**	**100**	**200**	**-**

Table 2 presents the distributions of teachers according to their educational attainment. Twenty seven teachers (6.1%) had attained masters' degree, 400 teachers (90.7) had a bachelor's degree in education and 14 teachers (3.2%) had other qualifications mainly diploma certificates. A bachelor's degree in education is considered as a fundamental qualification for teaching in secondary school in Kenya and the majority of the teachers were qualified to teach in secondary school level. Teacher qualification plays an important role in influencing student academic performance since qualification gives a teacher the confidence and mastery of concepts being taught at this level involving critical thinking and problem solving skills. Comparing the teachers' qualification against their resilience level all the teachers regardless of their qualification their resilience level was average and therefore it may be concluded that teachers' qualification didn't affect their resilience level.

Table 3: Teachers length of service and resilience level

Length of Service (years)	Frequency (f)	Percentage	AQ	Description
5 & below	33	7.5	156	Average
6-10	116	26.3	158	Average
11.15	130	29.3	161	Average
16-20	104	23.5	160	Average
21& above	55	12.5	163	Average
Total	**441**	**100**	**200**	**-**

From the analysis of table 3, 130(29.3%) had served between 11-15 years, 116 (26.3%) had served between 6-10 years, 104 (23.5%) had served between 16-20 years. The most experienced in terms of years of service were 55(12.5%) who had 21 and above years in service. Those with the least experience were 33 (7.5) who had served for 5 years and below. Three teachers (0.7%) missed to show their years of experience. The findings show that a good number of teacher respondents had a fairly reasonable number of years of teaching experience to be able to influence students' academic performance positively. Past studies have shown that teacher

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experience influences students' academic performance positively (Day, 2010). Teachers who have served for many years have better classroom management approaches and adequate teaching methods that encourage students' autonomy and take responsibility for students learning as well as manage classroom problems effectively. Teacher resilience was not affected by the length of service of the teachers. All the respondents in the study recorded an average resilience level, though it seemed to follow a certain order of increasing as the number of seniority in the service increased. Senior teachers may have a higher resilience compared teachers who have served for lesser years.

Table 4: Teachers' resilience level and students' performance by school category

Category sch.	AQ	KCSE 2015 Mean	KCSE 2016 Mean	AV. Mean	Description
National	158.2	10.2	9.7	9.95	average
extra county	146.2	8.88	7.08	7.98	average
county	141.1	4.61	3.08	3.98	average
sub county	139.5	2.91	2.14	2.52	below av.

From table 7, teachers' resilience level by school category seemed to correspond with the KCSE results recorded by the teachers in the years 2015 and 2016. National school teachers had average resilience of 158.2 and their performance in KCSE was above average of 9.95 points which is grade B plain. The extra county school teachers' resilience was average 146.2 and their KCSE results 7.98 which were also above average, grade B-. The county school teachers had AQ of average 141.1 and an average KCSE performance of 3.98, grade D+. The sub-county teachers resilience was average 139.5 and their KCSE performance was below average of 2.52, grade D-. Despite the resilience level of the sub-county schools teachers being average like the rest of the teachers, their students' academic performance was low and this may be due to the entry behaviour of their students and especially with emphasis of free and compulsory education policy, all the children must be in secondary school and those schools are the sub county schools which are day schools and mostly lacking major facilities and resources including teachers.

Table 5: Teachers over all resilience level

Description (AQ)	Frequency (f)	Percentage %
High	123	27.9
Above average	123	27.9
Average	153	34.7
Below average	14	3.2
Low	28	6.3
Total	**441**	**100**

Teacher's resilience level as measured by Adversity Quotient (AQ®)

The oval adversity quotient of a person is indicates their resilience level in times of adversity. From table 5 shows that majority of the respondents were average in resilience 153 (34.9%), 123 (27.9%) scored high, 123 (27.9) above average while 28 (6.3%) scored low and 14 (3.2%) of the teachers scored below average. The higher the teacher's resilience level, the better their ability to withstand and overcome adversity (Stoltz, 2010). Higher resilience is expected to translate to high job performance and better results for the students in KCSE. The overall resilience of a person explains how well they are suited to deal with adversities in their everyday life. Those individuals with low resilience are deemed not able to handle adversities. Schools prepare students for the world of work and therefore, a teacher is the most important person in life of a student (Day, 2011).

Table 6: Impact of Teacher resilience Level on the Students Subject Performance in 2015 and 2016

		Adversity Quotient	Subject mean 2015	Subject mean in 2016
Adversity quotient	Pearson Correlation	1	.462[**]	.598[**]
	Sig. (2-tailed)		.000	.000
	N	441	441	441
Subject mean 2015	Pearson Correlation	.462[**]	1	.692[**]
	Sig. (2-tailed)	.000		.000
	N	441	441	441
Subject mean in 2016	Pearson Correlation	.598[**]	.692[**]	1
	Sig. (2-tailed)	.000	.000	
	N	441	441	441

**. Correlation is significant at the 0.01 level (2-tailed).

The impact of teachers' resilience levels on students KCSE performance in the year 2015 and 2016 was established using Pearson Moment Correlation Coefficient. Students subject mean score in the year 2015 showed a significant statistical difference between teacher resilience and academic performance (r = 0.462, P = 0.000) which is significant at .0001. Similarly, the subject mean score in the year 2016 indicated significant statistical difference between teachers resilience and students' academic performance (r = 0.598, P = 0.000, N=441). This implied that a teacher with high resilience tend to recorded higher score in KCSE while teacher with low resilience level produces lower KCSE results. It confirms research by (Day, 2010) that teacher's resilience is related to student's academic performance. Teachers with high resilience are able to overcome all hardships they face in their work to post high scores for their students. On the other hand, teachers with resilience even when all other conditions for good performance are availed,

they still post low academic performance for their schools. Hence teacher resilience may be considered important aspect in improving students' academic performance.

Conclusion

The result indicates that teachers' resilience is crucial factor in students' academic performance. Students of teachers with high resilience have high mean scores and grades in KCSE than those of teachers with lower resilience and teaching same type of students therefore no matter the category of school, teachers with high resilience influence their students' academic performance positively. There was a statistically significant and strong correlation between students' academic performance in KCSE and teachers' resilience in the two years under study; 2015 and 2016 (r=0.462 and r= 0.598 respectively). The study recommends policy makers to recognize the importance of testing and assessing teachers' resilience and devising appropriate and timely school support methods and professional development programmes which promotes teachers resilient in order to improve academic performance.

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