RELATIONSHIP AMONG TYPE OF SCHOOL, ACADEMIC RESILIENCE AND ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN KIAMBU COUNTY, KENYA

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Abstract

This study investigated the relationship among type of school, academic resilience and academic achievement among secondary school students in Kiambu County, Kenya. A descriptive correlational design was used. A randomly selected sample of 390 students in the third year of secondary education was involved. The participants were drawn from four categories of secondary schools: Boys boarding, girls boarding, coeducational boarding and coeducational

day. Data were collected using a demographic form and the California Healthy Kids Survey (CHKS) resilience scale. A significant mean difference (F (3,386) = 9.39, p < .05) was reported in the academic resilience scores when type of school was considered. The difference was in favour of girls' boarding schools. The mean academic resilience and achievement for boys' boarding was found to be significantly lower than that of girls' boarding, boys' day, and mixed day secondary schools. It was recommended that educational stakeholders should shift from considering type of school as being peripheral to academic outcomes and instead regard it as a key contributor to the educational outcomes of secondary school students.

Keywords

Academic Resilience; Academic Achievement,Type of School, Secondary School Students

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1. Introduction

A general concern of educational systems around the world over is how adolescents learn. In fact, many formal secondary school curricula take into account adolescents' developmental processes in their design. While attention is given to the school as an important arena for promoting various psychological strengths among students, discussions about whether educators utilize the strengths of adolescents to guide them through their own learning process are not readily accessible. The National Association of School Psychologists (NASP, 2015) recognizes the importance of strength-based approaches to child and adolescent development and emphasizes on students' resilience in school and community as a way of overcoming the shortcomings of deficit-based approaches.

Academic resilience is students' ability to successfully deal with academic drawbacks, challenges and academic pressure (grades, exam pressure), stress and difficulties in the academic or school life (Martin & Marsh, 2006).There is evidence that academically resilient students are intrinsically motivated, are optimistic, self-regulated, and flexible, show agency toward being solution-focused, exercise reciprocity, have determination, are assertive, and possess good communication skills (Zolkoski& Bullock, 2012).

Owing to the wide recognition of academic resilience as a key factor in determining students' success or failure, the twenty-first century society requires that schools and teachers should enhance the resilience of young people. Dweck (2009) points out that the twenty-first century will belong to the passionate and resilient learners. The academic resilience approach is

based on the tenet that resilience offers a new perspective from which to view academic achievement. Instead of focusing on the deficits of students at-risk of failure, it attempts to identify the factors that account for their success. This shifts the focus of resilience research from a pathological, deficit, "at-risk" model toa strengths-based approach.

The strengths-based approach to resilience emphasizes certain individual behaviors, attitudes, and competencies as common components of resilience. Notably, most of these components are mainly developed in school (Knight, 2007; Cassidy, 2016). Researchers are paying more attention to how school type affects students' academic resilience. The general argument from recent studies is that school type has a bearing on school resources, which are predictors of students' academic outcomes. The level of resourcing of a school may have a direct influence on student's learning, their involvement in what is being taught, their motivation level, their sense of well-being, their belonging, and interaction with teachers (Mallick & Kaur, 2016). Based on this, we contend that school type may prime students to be resilient or not.

Studies comparing the resilience of students based on school type and location have reported mixed findings. In a study by Sarwar,Inamullah, Khan, and Anwar (2010) urban and rural Pakistan secondary students did not differ in their resilience. On the contrary, a descriptive study by Mallick and Kaur (2016) found that in India, urban students possessed higher levels of academic resilience than their rural senior secondary school counterparts. In Uganda, Kyoshaba (2009) found that school type can bolster academic resilience and achievement. This resonates well with Kenyan studies on the relationship between school type and academic performance. Such studies have found that school type is an important factor on students' completion and performance in school (Ejakait, Mutisya, Ezeh, Oketch, &Ngware, 2011; Ndura, 2013)**.**

In Kenya, public secondary schools are categorized into National, County and Sub-county levels. Government funding and resourcing of secondary schools vary depending on school category. The Institute of Policy AndResearch, IPAR, (2008) noted that the quota system of form one admission into national, county and sub-county levels serves to entrench disparities in educational achievement. The report further noted that this is because of the inherent disparities in factors such as endowment in resources, traditions and factors that account for the apparent link between a school category and performance of the students in national examinations. Majority of Kenya Certificate of Primary Education (KCPE) graduates are admitted into sub-county secondary schools. Most of these schools are poorly equipped and staffed. Owing to persistent unsatisfactory performance in national examinations, students in

such schools have limited chances to compete for entry into national universities to pursue high demand academic programmers, whose admission threshold is top Kenya Certificate of Secondary Education (KCSE) grades. The selection of KCSE graduates by the Kenya Universities and Colleges Central Placement Services (KUCCPS) raises serious equity issues that no education policy addresses.The Sub-county secondary schools admit the bulk of the students but are the least funded. This puts their students at a disadvantage compared with their colleagues in national and county schools.Thus, in spite of the enormous amount of money invested in education, the vast majority of students in poorly performing sub-county secondary schools leave school believing themselves failures, lacking qualifications, and languishing rather than flourishing, and see no educational future for themselves (IPAR, 2008).

Statistics by Ministry of Education, Science and Technology (2015) indicate stagnation by the Sub-county secondary schools in Kiambu in terms of general performance from 2007- to date. The sub-county secondary schools have continued to register poor performance, and the numbers of students attaining low quality grades of C- and below have been increasing (high wastage) while quality grades increased only minimally. A huge number of candidates fall in the wastage bracket of two E, limiting their chances of entry into tertiary colleges and higher education.

A resilience based approach may help explain why some students are debilitated by setbacks, poor performance, stress and study pressure, whereas others respond proactively to poor performance and break this downward spiral. Researchers opine that academic resilience accounts for why some students get caught in a downward spiral of underachievement. Additionally, it explains why some students crumble under the pressure of school whereas others are energized and embrace the challenges before them (Masten& Wright, 2010; Skinner &Pitzer, 2012; Mwangi, Okatcha, Kinai, &Ireri, 2015, Ebulum & Chidiboi, 2016).

Ferguson and Wolkow, (2012) assert that schools and education serve as an important stabilizer and guide for children. In spite of this, there is barely any systematic research on how the type of school may affect academic resilience, and the consequent academic achievement. As earlier observed by Ungar (2006) resilience is "a multidimensional construct, the definition of which is negotiated between individuals and their communities, with tendencies to display both homogeneity and homogeneity across culturally diverse research settings" (p. 219). In addition, Ungar (2006) reported that there has been little cross-cultural validation of findings, nor rigorous inquiry (qualitatively or quantitatively) into culturally determined outcomes that might be

associated with resilience in non-western cultures and contexts. Lia, Martin and Yeungc (2017) concur that it is therefore important to expand the context and culture in which resilience research takes place, a key aim of our study. This study therefore investigated the relationship among type of school, academic resilience and academic achievement among secondary school students in Kiambu County, Kenya.

2. Statement of the Problem

It is crucial to understand the factors that influence academic achievement in order to foster appropriate interventions. It is evident that the costs of academic underachievement are growing (Mwangi et al., 2015). These include discontinuation of education, inferior career potential, lower self-esteem, endangering of students' future personal as well as social and economic outcomes. Schools can profoundly influence the academic resilience of students, and consequently determine their success or failure.

Since school type is considered as an antecedent to resilient outcomes and the subsequent academic success, it warrants further investigation with an adolescent focus in order to understand its link with academic resilience, behavior and academic outcomes. This, if done, may lead to more conclusive findings on its role in academic success as well as its links with academic resilience particularly in the Kenyan cultural set up. This gap in the literature provided the rationale for this study, which we sought to address by examining this relationship, using a sample of secondary school students from Kiambu County, Kenya.

3.Theoretical Framework

The study was anchored on Bronfenbrenner's ecological-transactional model of development (Bronfenbrenner,1979). It provides a model for understanding the relationship between type of school, student academic resilience and academic achievement.This perspective views the child developing within a complex system of relationships affected by multiple levels of the surrounding environment. The environment is made up of a series of nested structures comprising the microsystem (the child's immediate environment), the mesosystem (interactions among microsystem factors), the exosystem (factors in the wider community), and the macrosystem (consisting of values, laws, and customs). Bronfenbrenner (1979) suggested that children are part of a living system and are embedded in their surrounding contexts.

Ungar (2012) concurs that the interactions between individuals and their ecologies can impact on their academic achievement. Resilience encompasses not just the personal qualities of the child, but also the child's social and physical environment (including the child's school, family, and community). This theory was found relevant in this study because it helps explain that the type of school is part of the child's microsystem, the most influential level of the ecological systems theory, and one of the factors that can enhance or inhibit a student's academic resilience, and the consequent academic achievement.

4. Method

The study utilized a descriptive correlational design to investigate the relationship between school type, academic resilience and academic achievement, using a sample of secondary school students from Kiambu County, Kenya. The design was deemed appropriate because we were measuring pre-existing variables, and therefore we did not attempt to manipulate, alter or assign causation among the three variables.

5. Participants

Data was collected from a sample of 390 form three secondary school students from Kiambu County, Kenya. Ten schools constituted the final sample, and were categorized as boys only boarding,girls only boarding, and mixed day secondary schools. They ranged from the ages of 15-24 years (M= 17; SD= 1.31). The participants were students awaiting the KCSE examination the following year, a preparation that may necessitate academic resilience.

6. Measures

Data collection was done using a questionnaire comprising two sections. Part A solicited for demographic data. The type of school was taken into account. Academic resilience was measured using an adapted version of the California Healthy Kids Survey (CHKS) Module B. The study of the psychometric properties of the scale showed that it had adequate validity. Constantine and Benard (2001) in a study that used the CHKS for grades 7, 9, and 11 ($n =$ 60,000), found that the internal and external resiliency scales had high internal consistency (Cronbach's alpha = .94 and .92, respectively), and alphas for the scales ranged from .59 to .90.

Liebenburg, Ungar, and Van der Vijver (2012) used a sample of two groups of youths in Canada, and demonstrated that the CHKS is reliable and valid in assessing resilience among youth from various cultural backgrounds. In a related study on the psychometric properties of the

CHKS, Cassidy (2016) in a study involving a sample of undergraduate students (N D 532) established that the scale has good internal reliability and construct validity.

The piloting of the CHKS-Module B in Kenya, using Cronbach Alpha, yielded internal consistency values ranging from .71 to .93 (Mwangi et.al, 2015). This was deemed suitable for use in the current study. Measurement of academic achievement was based on school achievement records.

7. Procedure

The study tools were piloted on a group of 30 students(15 boys and 15 girls) randomly selected from a mixed day public secondary school in Kiambu County, Kenya to ascertain their reliability. Informed consent was sought prior to students' participation in compliance with research ethics. The participants were also notified of the confidentiality of data gathered. They were further given instructions regarding how to fill the questionnaire. Filling of questionnaires was done during the school day in the selected classrooms, within a time span of 30-40 minutes. Once completed, the questionnaires were collected for analysis.

8. Results

The participants' scores on academic resilience were computed for the four types of schools included in the study. Table 1 presents the descriptive statistics and the distribution of participants' levels of academic resilience across the four school types.

School Type	Descriptives					Level of Academic Resilience		
	n	Range	M	SD	SE	Low n = 19	Moderate n = 215	High n =156
Girls Boarding	78	92-222	168.00	32.06	3.63	5.3	17.7	25.0
Boys Boarding	63	87-212	144.43	31.96	4.03	42.1	19.1	9.0
Mixed Day	230	92-226	165.32	31.36	2.07	47.4	60.9	57.7
Boys Day	19	111-210	176.32	33.27	7.63	5.3	2.3	8.3

Table 1: *Descriptive Statistics and Levels of Academic Resilience per School Type*
Note. N = 390.

Notably, the highest mean academic resilience score was recorded in boys' day schools (M=176.32; SD=33.27), followed by girls' boarding (M= 168.00; SD= 32.06), and mixed day (M= 165.32; SD=31.36) schools. The lowest mean was recorded by boys' boarding (M=144.43; SD=31.96). The overall average mean score was 163.02 (SD=32.70).

The distribution of the participants' level of academic resilience indicates that in the low level of academic resilience, 47.4 % of the cases were from mixed day secondary schools while42.1% were from boys' boarding secondary schools. Notably, boys' day and girls' boarding secondary schools each hadonly 5.3%of the participants in this level. Out of the participants categorized as having moderate level of academic resilience, 60.9% were from mixed day secondary schools, 19.1% were from boys' boarding secondary schools and 17.7 % were from girls' boarding secondary schools.Boys' day secondary schools only had a paltry 2.3 % of participants in this level. In the category of participants rated as having high level of academic resilience, most of the participants (57.7%) were from mixed day secondary schools followed by those from girls' boarding secondary schools (25.0%). Boys boarding secondary schools had only 9.0% of the participants in the high level category of academic resilience.Only 8.3% of participants in the high level of academic resilience were from boys' day secondary schools.

A one-way ANOVA was computed to test for differences in the mean academic resilience scores across the school types.The findings indicated that there was a significant mean difference in the academic resilience scores across the four types of schools (F (3,386) = 9.39, p < .05). Post hoc analysis using the Tukey's HSD test for mean differences revealed that the mean academic resilience score for boy's boarding secondary schools (M= 144.43, SD= 31.96) was significantly lower (p< .05) than the means for girls' boarding secondary schools (M=168, SD=32.06); mixed day secondary schools (M= 165.32, SD= 31.36) and boys' day secondary schools (M = 176.32, SD= 33.27).

The study further sought to determine whether the participants' academic achievement differed across the types of schools. A cross-tabulation of type of school and levels of academic achievement is presented in Table 2.

Table 2: *Descriptive Statistics and Levels of Academic Achievement Across the School Types*

				Level of Academic Achievement		
School Type	n	*M*	*SD*	Low	Average	High
Girls Boarding	78	51.97	8.93	5 (1.3)	55(14.1)	18 (4.6)
Boys Boarding	63	45.45	8.00	12 (3.1)	48 (12.3)	3(0.8)
Mixed Day	230	50.03	10.59	36 (9.2)	141 (36.2)	53 (13.6)
Boys Day	19	56.63	6.07	0 (0.0)	14 (3.6)	5 (1.3)
Total	390	50.00	10.00	53 (13.6)	258 (66.2)	79 (20.3)

Note. Percentage of total presented in parenthesis.

As peresented in Table 2 the largest academic achievement mean was for boys day secondary schools (*M*= 56.63, *SD*= 6.07), followed by girls boarding secondary schools (*M*=51.97, *SD*= 8.93), then mixed day secondary schools (*M*= 50.03, *SD*= 10.59) while boys' boarding secondary schools had the lowest mean (*M*= 45.45, *SD* = 8.00).

Regarding the levels of academic achievement, 13.6 % of the participants were categorized as having low academic achievement, 66.2 % had average academic achievement while 20.3% had high academic achievement. Within the low academic achievement category, 9.2 % of the participants were from mixed day secondary schools, 3.1 % from boys' boarding secondary schools and 1.3% were from girls' boarding secondary schools.In the average category of academic achievement, 36.2% of the participants were from mixed day secondary schools, 14.1% were from girls' boarding, 12.3 % from boys' boarding schools and 3.6 % from boys' day secondary schools. Out of the participants classified as having high level of academic achievement, 13.6 % were from mixed day secondary schiools, 4.6% were from girls' boarding, 1.3% were from boys' day secondary schools and 0.8% from boys' boarding secondary schools.

We had hypothesized that there were no significant differences in academic achievement, given the school type. To test this, a One-Way ANOVA was computed. The results indicated that there were significant differences in the means for participants' academic achievement across the four types of schools (*F* 3,386= 8.63, *p*<.05). The Tukey's HSD test for mean differences revealed that the mean academic achievement score for boy's boarding secondary schools (*M*= 45.45, *SD*= 8.00) was significantly lower (*p*< .05) than the means for girls' boarding secondary schools (*M*= 51.97, *SD*=8.93); mixed day secondary schools (*M*= 50.03, *SD*= 10.59) and boys' day secondary schools (*M*= 56.63, *SD*= 6.07). In addition, the mean academic achievement score for mixed day secondary schools was significantly lower than that for boys' day secondary schools.

The study sought to further investigate whether learners with different levels of academic resilience had significant differences in their academic achievement. We first cross-tabulated the academic achievement levels with the academic resilience levels. The results are presented in Table 3.

Table 3: *Cross tabulation of Academic Achievement and Levels of Academic Resilience*

Academic Resilience	Academic Achievement					
	Descriptive Statistics			Levels		
Levels	*n*	*M*	*SD*	Low	Average	High
Low	19	42.37	4.57	5 (1.3)	14 (3.6)	0(0.0)
Moderate	215	44.39	7.99	48(12.3)	154(39.5)	13(3.3)
High	156	58.66	5.84	0 (0.0)	90 (23.1)	66(16.9)
Total	390	50.00	10.00	53(13.6)	258(66.2)	79(20.3)

Note.N=390. Parentheses indicate percentage of the total.

The results revealed that 13.6% of the students were categorized as having low academic achievement. Out of these, 12.3 % had moderate academic resilience, while 1.3 % had low academic resilience. Notably, none of the low academic achievers fell in the category of high academic resilience. In addition, 66.2% of the sample had average academic achievement. In this category, 39.5% had moderate academic resilience, 23.1 % had high academic resilience while only 3.6 % had low academic resilience. It was further established that 20.3 % of the participants had high academic achievement. Out of these, 16.9% had high academic resilience scores, while 3.3 % had moderate level of academic resilience.

The mean academic achievement scores were computed per the levels of academic resilience. As presented in Table 3, the mean academic achievement score for the low academic resilience category was 42.37 (*SD*=4.57), that for the moderate academic resilience category was 44.39 (*SD*=7.99) while that for the high academic resilience category was 58.66 (*SD*= 5.84). The pattern of the mean academic achievement scores was consistent with the results of previous studies that have reported a positive correlation between levels of academic resilience and levels of academic achievement (Esquivel, Doll, & Oades-Sese, 2011; Masten & Tellegen, 2012).

To test whether there were significant differences in the academic achievement mean scores across the three levels of academic resilience, a One-way ANOVA was computed. The results indicated that there was a significant difference in the means (F, 2, 387=196.07, $p<$ 0.05).The Tukey's HSD test for mean differences revealed that the mean academic achievement for learners in the low category of academic resilience (*M*= 42.37, *SD*=4.57) was significantly ($p<$ .05) lower than the means for moderate academic resilience(*M*= 44.39, *SD*=7.99) and high academic resilience*(M*= 58.66, *SD*=5.84).The finding that participants with low academic resilience had the lowest mean academic achievement corroborates findings by Kuyper (2014)

who observed a direct relationship between resilient behavior and academic achievement. The higher the resilient behaviour, the higher the academic achievement and vice versa.

The study further explored whether the relationship between academic resilience and academic achievement differed by school type. A bivariate correlational analysis was conducted and the output grouped per type of school. The findings were as presented in Table 4.

Table 4: *Relationship between Academic Resilience and Achievement per School Type*

School Type	n	r	p
Girls Boarding	78	.78**	.00
Boys Day	19	.66**	.00
Mixed Day	230	.65**	.00
Boys Boarding	63	.44	.06

Note = 390. **Correlation is significant at *p* = .01 (two-tailed)

The results in Table 4 indicate that the strongest relationship(r (388) =.78, p<.05) was in girls' boarding, followed by boys' day (r (388) =.66, p<.05), and mixed day (r (388) = .65, p <.05). In the boys' boarding secondary schools, the relationship was moderate and marginally insignificant. This could be attributed to peer pressure which may influence boys in deciding that they are just too cool for school, and thus increasing their likelihood of being rowdy in class. This is consistent with previous research (Voyer & Voyer, 2014) which reported that overall, girls perform better in most (or all) school subjects than boys, and that this trend has manifested in multiple countries since the early 20th century.Voyer and Voyer (2014) further explained that the advantage girls have in all courses could be pegged on social and cultural factors whereby parents assume boys should fare better than girls naturally, and hence end up encouraging girls to put more effort into their studies. OECD (2016) concurs that when it comes to the students who really struggle, the difference is stark, boys are 50% more likely than girls to perform poorly.

9. Discussion

The findings of our study show that majority of the participants had moderate levels academic resilience which may help explain the average academic achievement levels among the majority of the students. In line with this, Hassim, Strydom, and Strydom, (2013) and Mallin, Walker, and Levin, (2013) observed that highly resilient students attained high academic grades, while those who were not very resilient achieved lower academic grades. This is consistent with the results reported by Sandoval-Hernandez and Cortes,(2012) and Kyupper (2014) that the

higher the resilient behavior, the higher the academic achievement and vice versa, and hence, an individual who displays resilient behavior also displays greater academic achievement.

Mean differences were found in academic resilience, given the different types of schools. This corroborates previous research by Oral and Dincer (2009) who in a study of the profile of academic reilience of 15 year olds in public high schools in Turkey found that the probability of being resilient varies by gender, region and school type. The study also established that aspects of school resources, policies, funding and governance also correlate with resilience. In consonanceLi, Martin and Yeung (2017) established that there was a school effect on levels of academic resilience and the consequent academic achievement. The difference was in favour of learners from girls boarding schools. Learners from boys boarding were found to have the least mean academic resilience scores. This could indicate that the learning experiences in boys' boarding schools do not adequately promote the development and use of academic resilience,an instrumental factor in determining academic achievement. It could also imply that boys in boarding schools are not well equipped to effectively utilize resilience factors, at the individual level as well as at the environmental level.

However, these findings differ markedly from those of Sabitu, Babatunde, and Oluwole (2012) and Schuttle (2012) who did not establish any significant difference in academic performance and academic resilience per type of school. This may call for further research in order to establish more conclusive findings.

10. Limitations

The participants of the study were students from sub-county schools in Kiambu County; Kenya.This may affect the generalizability of the findings, which should therefore be evaluated in this context. Future studies can be conducted using samples from the other 46 counties in Kenya. Secondly, academic resilience data was gathered using a self-report questionnaire, which is open to bias.

11. Conclusion

The study established that secondary school students in sub-county secondary schools in Kiambu County, Kenya had moderate levels of academic resilience and academic achievement. This points at the need to increase students' academic resilience, which in turn may enhance their academic achievement.

Learners from boys boarding were found to have the least mean academic resilience scores. A possible explanation for these findings may be that there could be some factors in the other school categories that may be interfering with the development of academic resilience. This may be impacting negatively on the academic achievement of the learners in boys' boarding schools.This calls for a paradigm shift by stakeholders from seeing the type of school as peripheral to academic achievement, but instead viewing it as one of the drivers of academic achievement among secondary school students.

12. Further Research

The sample in this study comprised of secondary school students in Sub-county schools. To enhance the understanding of academic resilience in the entire Kenyan school system, it is recommended that future samples can be drawn from students in the County and National schools , colleges and universities. In addition, qualitative studies can be undertaken in order to establish more conclusive findings.

13. Acknowledgements

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