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GENDER DIFFERENCES IN ACADEMIC MOTIVATION AMONG PUBLIC SECONDARY SCHOOLS' STUDENTS IN NAIROBI COUNTY, KENYA

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Abstract

Despite dynamic efforts from education stakeholders to ensure gender equality in education, there remains a serious gap between boys' and girls' academic performance in secondary schools. The studies focusing on the issues of gender difference in academic motivation of students are also scarce in Kenya. This is despite that academic motivation is a significant determinant of academic success of students at any age. This study sought to examine gender differences in the academic motivation of students in public secondary schools in Nairobi County, Kenya. The study employed Self-determination theory by Ryan and Deci. The Academic Motivation Scale, a high school Version was adapted to measure academic motivation. The study adopted a correlation research design. Questionnaires were administered to a sample of 397 form four students drawn from 12 public secondary schools in Nairobi County. Gender difference in academic motivation was tested using Independent Samples t-Test and the level of significance in rejecting the null hypothesis was at p= ≤ .05. The research findings showed gender difference in academic motivation in favor of girls (t= 3.74, df= 318, P< 0.05. This might imply that preferential affirmative action for girls has been effective. A major recommendation of the study was that intervention designs that offer support in initiating, increasing and sustaining students' academic motivation should be reframed, reviewed and revamped, and especially those that target the boy child. This may ensure equity in performance for all.

Key words: Academic motivation, Extrinsic motivation, Gender, Intrinsic motivation

Introduction

Education is one of the fundamental components that bring growth and progress into the society by empowering workforce. It is also key to the development and growth of child's potentialities. Academic success is linked to academic motivation which determines positive outcomes. The concept of motivation has been used in many different disciplines to examine the reasons underlying human behavior. Additionally, motivation encompasses a process that is responsible for the initiation, intensity, maintenance, direction, and persistence of learning behavior of the students. For this reason, academic motivation has been found to be a significant determinant of academic success at any age due to its value to energize and direct learning behavior (Gupta & Rasmi 2017; Smith, *et al*., 2018; Husseyn, Chelliah & Arulmoly, 2017; Salim &Vishal, 2019)

Recently, there has been extensive examination of academic motivation among students but gender difference in academic motivation has received a relatively little attention. Hitherto, it is argued that adolescents internalize gender expectations as to what is "appropriate" male and female behavior in their gender ideology and this in return affect their academic motivation (Maaike *et al.*, 2016). Moreover, secondary school is a significant academic period that determines the next level of learning. It is also a stage during which students must develop work-related identity and select a career. Notably, a consistent finding in research

on academic motivation is that motivation tends to decline after the transition from primary to secondary education and this decline occurs most consistently during early adolescence, until 15 or 16 years of age (Timo & Barbara, 2016). Given the interdependence of academic motivation and student performance, it is expected that students' performance decline as well during the early years of secondary education. However, it is unclear whether gender is associated with this decline of academic motivation.

Academic motivation can be used to decrease inappropriate behavior and positively affect students' performance on standardized tests like Kenya Certificate of Secondary Education (KCSE) and the opposite is true. Since academic motivation influences what, how, and when students learn, it is important to find out how gender is related to differences found in motivational learning in order to work with students' motivational systems. Although gender differences in academic motivation are evident from education research, it may be difficult to generalize the findings due to geographical and contextual disparities. The present study aimed at investigating such claim for it is important for teachers to know student motivation domains inclinations in order to plan their teaching learning styles that effectively connect with the students. Some previous studies (Sikhwari, 2017; Myfanwy *et al.,* 2015; Koseoglu, 2013)) have reported that females show significantly higher levels of academic motivation than male while others (Guo *et al.,* 2015; Ganley & Lubienski, 2016) indicated that males and females are likely to score differently on various domains of academic motivation. Other studies (Bartholomew *et al.,* 2018; Ghaonta, 2017; Marina & Lurdes, 2014) designated that gender differences have been more apparent within intrinsic attribute of motivation.

Onyekwere *et al., (*2018) study focused on the influence of extrinsic and intrinsic motivation on pupils' academic performance in mathematics. A sample of 3056 primary six pupils in Owerri Education zone of Imo State was used for the study. The findings indicted that motivation improves academic performance of the pupils and a gender difference was found in academic motivation. Marina and Lurdes (2014) found that it is the motivation domain of intrinsic that consistently enhances performance along elementary school. They also argued that for younger students, extrinsic motivation does not undermine (and may even cooperate with) intrinsic interest and academic performance and that by the end of elementary school this form of motivation may play a more debilitating role in student's intrinsic interest and achievement.

In confirmation of these findings, Gillet *et al.,* (2012) investigation of school intrinsic and extrinsic motivation and amotivation. He used a sample of 1,600 elementary and high school students aged 9–17. The results revealed a systematic decrease in intrinsic motivation and self-determined extrinsic motivation from age 9 to 12 years, a slow stabilization until 15 years old, followed by an increase after that point. Second, non -self-determined extrinsic motivation showed a decrease up to 12 years old and a slow stabilization after that point. Finally, amotivation was relatively low and stable from age 9 to 17 years. These findings conclude that motivation is more of a function of age and not gender. This result underscore the importance of a better understanding of the mechanisms through which lower intrinsic motivation and self-determined extrinsic motivation in older students take place. This might eventually lead to appropriate interventions and optimal motivation in students of all ages.

Sikhwari's (2017) study consisting of second year students representing four schools at the university in Limpopo, South Africa reported that female students are significantly more motivated than their male counterparts. However, Ghaonta's (2017) study with did not find a significant gender difference in intrinsic and extrinsic academic motivation with senior secondary school students of Shimla district. An earlier study by Koseoglu (2013) found a statistically significant difference between male and female students in academic motivation in favor of girls in both intrinsic and extrinsic motivation domains. Furthermore, a more recent study by Ayub (2018) with 200 college students in Karachi found gender difference ($t = 4.324$, $p < .05$) on motivation and academic performance.

Additionally, Karatas and Erden (2014) study on undergraduates' academic motivation in Turkey with 75 subjects from different departments indicated that amotivation level of male was higher than female and which is associated with 'giving up' and a complete lack of an intention to act (Bartholomew *et al*., 2018). Besides, extrinsic motivation level of male undergraduates was higher than that of female undergraduates. In the view of Meadows-Fernandez (2017), extrinsic motivation is reward driven behavior and lack self-determination hence poses a danger in the academic progress (Deci, 1975). This is in contrast to a study by Haktan (2019) where men's academic motivation average score was higher than that of women. Myfanwy *et al.*, (2015) study on gender differences in adolescents' academic motivation found gender differences in academic motivation in favor of girls. Consistent with this result was Sharma and Sharma (2018) research and a local study by Mwihia (2020).

According to some researches, gender difference in academic motivation can be understood in terms of specific/ subjects' areas of study. For example, boys reported greater intrinsic motivation and perceived competence for mathematics than do girls (Guo *et al.*, 2015; Ganley & Lubienski, 2016). The most significant differences were found in secondary school and university students rather than students in lower educational levels. This understanding can be used to address gender differences by facilitating the interpretation of the differential impact of self-beliefs and values of the students. In terms of this results, mathematics interventions for girls should start early and deal specifically with perceptions of confidence and control (Ganley & Lubienski, 2016). Excellent performance in mathematics is significant due to their perceived contribution to industrial and technological development. Additionally, mathematics is crucial in attaining the Sustainable Development Goals (SDGs) and Kenya's Vision 2030. As noted by Palt, (2018), it is crucial that African countries prioritize gender diversity and appreciate the role that women can play in the development of scientific solutions to address these issues at local levels.

In Self-determination theory (SDT), the fulfillment of basic psychological needs (autonomy, competence, and relatedness) aid to understand and predict individual differences in motivation (Deci & Ryan, 2000) and not gender. The need for autonomy for the students refers to experiencing a sense of psychological freedom and volition to be him/herself. The need for competence refers to feeling of being able to achieve success, while relatedness refers to experiencing a close bond. Self-determination theory strongly proposes that the degree to which any of these three psychological needs is unsupported within a social and academic context will have a significant detrimental impact on motivation and overall wellness (Deci & Ryan, 2000) irrespective of gender. It is then clear that any condition that

thwart this feeling of psychological need fulfilment do not foster optimal motivational processes (Ryan & Deci, 2000). Several intervention studies have demonstrated that teachers can be trained to adopt and balance these motivating strategies to the benefit of students' engagement and motivation in order to challenge students to actively take charge of their own learning.

In Kenya, disparities in performance have been noted over the past years in the Kenya Certificate of Secondary Education Examination (KNEC, 2018; Republic of Kenya, 2016; Wasanga *et al.*, 2011). Weak academic performance has been registered in mixed gendered schools which have the bulk of the secondary school students in Kenya and Nairobi County in particular. Single-sex schools have always produced the best performance. In Kenya there is no dependable, consensus, and vigorous empirical evidence about the gender differences in academic motivation hence the need for current study.

Collectively, the aforementioned studies have contributed to the understanding of gender differences in academic motivation and its domains. Educational statistics and worldwide media have reported a clear gender gap in academic achievement between males and females. From 2016 to date records show that over 50 percent of the candidates in Kenya who sat for KCSE and who scored the university cut-off grade, were boys (KNEC, 2019). This may have far reaching implications for the girls in terms of missing more rewarding career opportunities embedded in further education, under-representation of girls in the work force, inadequate manpower to the country as well social-economic wastage which is of great concern to all stakeholders in education.

Many reasons and rationales in academic motivation have been identified by professionals in education, psychology, sociology, counseling, history and culture. However, researchers have given little attention to gender difference in academic motivation especially in developing countries. This study addressed this gap in Nairobi County, Kenya.

Hypothesis of the Study

Ho_1 There is no gender difference in academic motivation among public secondary schools students in Nairobi County, Kenya.

Methodology

Correlation design was adopted for this study to determine the statistical relationship between the variables of the study. The design has the capacity to define the strength of a relationship between independent variable (gender) and dependent variable (academic motivation). Independent variables were the form four students' gender which was categorized as boys and girls while dependent variable was the levels of the form four students' academic motivation. According to Mugenda & Mugenda (2003), the degree of such a relationship is expressed as a correlation co-efficient.

The sample was attained through simple random sampling using Yamane (1967) formula. A sample size of size of 397 participants was attained from 12 out of 84 public secondary schools in Nairobi County. This represents 14 % of the total numbers of public secondary schools in Nairobi County. This is considered enough in social science study which basically recommend a minimum of 10% (Gay, 1981).

The Yamane formula is stated as:

$$n = \frac{N}{1+N(e)2}$$

Where n is the corrected sample size, N is the population size and e (0.05) is the desired level of precision (margin of error). A 95% level of confidence is assumed. Calculation of sample size was done as follows;

$$\mathbf{n} = \frac{26477}{1 + (26477 * 0025)} = \mathbf{394}$$

The sample for this study (397) slightly exceeded the one endorsed by Yamane (1967). Academic motivation of students was measured using Academic Motivation Scale (AMS), High School version developed by Vallerand, *et al.,* (1992). Using information from the pilot study, the items which were in the original AMS was modified to fit into the participants' context. According to Vallerand, et al (1992), the AMS is based on self-determination theory and has 28-items divided into seven subscales. The subscale reflects, one subscale of amotivation, three ordered subscales of extrinsic motivation (external, introjected, and identified regulation), and three distinct, ordered subscales of intrinsic motivation (intrinsic motivation to know, to accomplish things, and to experience stimulation). The items in each subscale were rated on a seven-point scale ranging from 1 = totally disagree to 7 = totally agree. Academic motivation scores range from -18 and 18. A high score therefore on a subscale indicated high commendation of that particular type of academic motivation. Analysis of reliability for the current study for AMS using Cronbach's alpha was found to be 0.86.

Data Analysis

The data obtained from the questionnaire were then scored and coded for statistical analysis using Statistical Packages for Social Sciences – SPSS – software. Independent Sample t-test was used to test the hypothesis at.05 level of significance. Distribution of students by gender is presented in Table 1:

Table1
Characteristics of the Respondents by Gender

Variable	Category	Frequency	Percentage (%)
Gender	Female	182	45.8
	Male	215	54.2

On sex comparison, more boys than girls participated in the study. This is proportionate to the students' population in secondary schools in Nairobi County.
Descriptive statistic was done on the respondents' academic motivation and this analysis is presented in Table 2:

Table 2
Descriptive Statistics of the Respondents' Academic Motivation

	N	Min	Max	Mean	Sd	Sk	Sd. Err
Academic Motivation Score	320	-7.13	15.00	7.3591	4.28287	-.788	.136
Valid N (listwise)	320						

Note.min = minimum; max = maximum; Sd= standard deviation; Sd Err= standard Error; Sk= skewness.

Negative skewness (Sk= -0.79) shows that majority of the respondents had high academic motivation score. The anticipated minimum and maximum scores were -18 and 18 respectively. The coefficient of skewness was found to be -7.88 implying that many participants rated themselves highly on this scale. Standard error was of 0.136 and being relatively small gives an indication that the mean is relatively close to the true mean of the overall population. The respondents' academic motivation score was categorized further into the low, average and high level of academic motivation as follows: -18 to -7, -6 to 6 and 7 – 18 respectively. The results are shown in Table 3:

Table 3
The Respondents' Levels of Academic Motivation

Levels of academic Motivation		Frequency	Percent (%)
Valid	Low	224	56.4
	Average	123	31.0
	High	50	12.6
	Total	397	100.0

Table 3 indicates that a majority or more than half of the total respondents (224, 56%) had low levels of academic motivation. An insignificant percentage of the respondents fell in the

high level of academic motivation (50, 12.6%). Indeed, students in Nairobi County with its urban outlook and the advantages accrued to it had a low academic motivation.
Further analysis was done to determine if gender relates to academic motivation and findings are presented in Table 4:

Table 4
Responses of Students' Gender versus Academic Motivation Statistics

	Gender	N	Mean	Sd
Academic Motivation	Female	152	8.2815	4.00261
Score	Male	168	6.5246	4.36777

Note. Sd= standard deviation
The findings in Table 4 illustrate that girls have a significant higher mean in academic motivation (M=8.28, SD=4.00) than boys (M=6.52, SD=8.01). Given the relationship between the levels of academic motivation and academic motivation, girls are therefore more likely to achieve better academic performance than boys. More computation was done to find out gender orientations in terms of the domains of the academic motivation and findings are presented in Table 5:

Table 5
Academic Motivation Domains versus Gender

12	Sex	N	Mean	Sd
IMk	Girl	176	21.4943	5.28069
	Boy	208	20.9519	5.46465
IMa	Girl	178	21.2022	4.97946
	Boy	207	20.1643	4.95730
IMes	Girl	171	19.7661	5.73362
	Boy	196	19.2857	5.58018
Emid	Girl	177	23.7175	4.40420
	Boy	209	23.2010	4.91835
EMer	Girl	175	19.8800	5.95215
	Boy	198	20.8889	5.23050
EMij	Girl	181	16.8453	3.49735
	Boy	208	16.7500	3.89909
Amotivation Score	Girl	182	7.3681	4.22982
	Boy	211	9.2559	5.33460

*Note.*Sd = standard deviation; IMk = Intrinsic Motivation to know; Ima = Intrinsic Motivation orientation towards achievement; IMse = Intrinsic motivation towards stimulating experiences; EMid = Extrinsic Motivation identified regulation; Emir = Extrinsic Motivation introjected regulation; Emer = Extrinsic Motivation external regulation; A= Amotivation; M= mean; SD = standard deviation

Table 5 illustrate that girls are more intrinsically motivated than boy in all the domains except extrinsic motivation- introjected and amotivation which are the least autonomous in the self-

determination continuum. For motivation to be most operational there must be a balance of both extrinsic and intrinsic motivation and girls have achieved this. Sex difference in all the domains is highest in Amotivation which the lowest domain and in favor of boys (1.89). This is worrying trend considering that Amotivation is associated with lack of intent to engage in academic activity, learned helplessness, where individuals withdraw effort because of perceptions of incompetence and loss of control.

The independent samples t- test was used to assess the gender difference in academic motivation and the findings are presented in Table 6:

Table 6
Independent Samples t-Test for Gender Difference in Academic Motivation

		T	Df	Sig. (2-tailed)
Academic Motivation Score	Equal variances assumed	3.738	318	.000
	Equal variances not assumed	3.755	317.946	.000

Key: Df degree of freedom.

The independent samples t- test provided evidence that there was a significant gender differences in academic motivation ($t= 3.74$, $df= 318$, $P< 0.05$). The result of the gender difference was at $\alpha = .05$. The difference was in favor of females. The null hypothesis which stated that there is no gender difference in academic motivation among the public secondary schools' students in Nairobi County, was therefore rejected.

Discussion

The above findings are in conformance with previous studies by Myfanwy *et al.*, (2015), Sharma and Sharma, (2018), Karatus and Erden (2014), Mwihia, (2020) which exhibited a significant gender difference in academic motivation. These findings frequently demonstrated gender difference in favor of girls across various educational levels and institutions. Gender difference in all the domains is highest in amotivation which the lowest domain and in favor of boys (1.89). Success or failure of students in learning environments is explained by type and level of motivation (Gupta &Rasmi; Smith *et al.*, 2018; Salim &Vishal 2019; Huseyin *et al.*, 2017; Meadows-Fernandez, 2017; Deci, 1975; Marina & Lurder, 2018). More females were higher in intrinsic motivation to know which is liked to academic success and lower than boys in amotivation which is associated with lack of academic intent.

This finding therefore reveals that girls are holding themselves to a higher standard than boys do in school related activities believing that they have to be exceptional to succeed in the society stereo-typed as male-dominated. This may explain why on average and especially in Kenya, girls are venturing into the previously male dominated STEM fields.

Conversely, boys were found to be extrinsically motivated implying that their desire to pursue a subject was for reasons outside of the individual, such as rewards, grades, parental

or teachers or parents' approval. Academic efforts emanating from external rewards are not enjoyable and sustainable (Ryan & Deci, 2000) hence may inhibit academic progress among the boys. Overall, intrinsic motivation increases initiatives and persistence in educational activities for it act as a catalyst of learning since it yields self- determination (Ryan &Deci, 2000) and creates experiences that reinforces learning activities. Girls therefore are more likely than boys to better able to process inherent interest in pursuing their educational paths and find learning enjoyable, effortlessness, and experience of volition which make learning activity self-sustaining.

However, the reviewed literature showed gender difference in academic motivation in mathematics in favor of boys (Guo et al., 2015; Ganley & Lubienski, 2016). Therefore, efforts must be made to correct the negative perceptions and stereotypes or STEM-related gender bias that girls have developed. Educators must strive to create environments in high school that are inviting to females to pursue STEM subjects. For example, encouraging girls only classes can inspire, instill interest and offer a judgment-free environment where they regain their confidence in STEM and not lose their passion for it.

However, some did not find any robust relationship between gender and academic motivation but developmental stage seems to have played a big role (Mehmet *et al.,* 2017). Gillet, *et al.,* 2012 study revealed a systematic decline of intrinsic motivation from age 9 to 12 years. This implies that, children are naturally and intrinsically motivated in their own learning and development but this motivation declines drastically at secondary schools' level. This could be attributed to developmental, increased contextual and academic challenges. Since academic motivation is seen as a pre-requisite of academic engagement and outcome (Gupta & Rasmi, 2017), a global concern in the education sector should be how to initiate and maintain students' motivation so that they learn optimally at school, attain realistic career goals and academic excellence in their academic pursuit.

From the reviewed studies, it is evident that gender difference is more of a significant predictor of academic motivation in secondary school levels than in the higher institutions of higher learning. By understanding that it is possible to come up with specific strategies and programs that are gender friendly. For example, for males, who were generally found to retain low intrinsic levels of motivation can have this attribute strengthened. This can be done through the fulfillment of the basic psychological needs of competence, relatedness and autonomy and which enhances intrinsic motivation

The presence of gender differences in academic motivation in favor of girls in Nairobi County could be attributed to the fact that the highly urbanized learning environment present less stereotypical gender biases. This has made the girls to maintain learning focus and persistence. Sex differences in motivation could be rooted in the overwhelming social emphasis on feminism which has led to the over empowerment of the girl child in Kenya. Of late this has ignited an emotional debate regarding the boy-child questions. However, despite the passions and political correctness encountered by addressing these questions, these are important motivational issues about boy child that must be addressed by the

academic stakeholders on how to develop academically motivated behaviors amongst boys if we are to provide quality education for all.
Moreover, majority of teachers in Nairobi County secondary schools are women who whose posting is based on their marital status and who may not offer effective role models to the boys and instead perceive them as less able to concentrate, are less determined to solve difficult problems, and are less productive. According to O'Dea *et al., (*2018) girls tend to do better when they're taught by a woman with a strong STEM background, so they can see they can do STEM, too.

Parents are more protective over girl child than a boy child due to inherent dangers in urban life. Moreover, all day schools for girls have been converted into boarding schools to enhance girls' safety and security making them more focused in educational endeavors more adaptive to learning tasks. Conversely, boys are perceived to be tough and able to take care of themselves against the inherent urban distractions making them are less likely to ask for help. This imposed autonomy makes them more negative about school and develop doubts and fears of the capabilities needed to make it academically. This may be considered as a key barrier to the success of any boys' education. These calls for the need to work with students' motivational systems more than impose motivation from the outside (i.e. extrinsically) with a more emphasis on boys.

Conclusion

The findings of the study provided evidence to the effect that there was significant gender difference in academic motivation in favor of females. More specifically, with regard to motivation domains, gender differences were found in favor of girls with regard to intrinsic and extrinsic motivation sub-scales except in extrinsic motivation introjected regulation where boys reported a higher mean. Further, boys ranked higher in amotivation which is associated with lack of intent in learning. This is indicative of the benefits of the preferential affirmative action in promoting the welfare of the girl-child. However, in retrospect, the society seem to have ignored the plight of boy-child causing a reverse discrimination. There is need to ensure equity and fairness in education by basically making sure that gender does not become an obstacle to achieving educational potential.

Recommendations

1. Based on the significant role of motivation recognized in this study, it is recommended that all education stakeholders should have more collaboration and commitment in developing strategies and programs on how to facilitate both extrinsic and intrinsic motivations of the students and strike a realistic balance so as to spur students to higher academic performance. This can be done by creating schools' environment and pedagogy that serves the psychological needs of the students hence motivation all student's engagement in school activities.
2. Motivational strategies that are gender-centered and sensitive should be endorsed and reinforced and mostly befitting the boy child and avoid "one size fits all" motivational concepts.

3. Educational trainers should contemplate a framework of professional development for teachers which include methodologies on how and when to instill academic motivation that is gender based among secondary schools' students.
4. De-empathize grading system or rewards and make the student evaluation more holistic by considering other skills and talents of students. This will give all students a chance of experiencing success and direct their behavior toward activities that they value and in which they have some expectancy of success.

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