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## The Influence of Sex-Role Self-Concept on Academic Performance among Secondary School Students in Kenya

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# The Influence of Sex-Role Self-Concept on Academic Performance among Secondary School Students in Kenya

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**Abstract-** The study examined the influence of sex-role self-concept on academic performance among students in coeducational secondary schools in Siaya District. The sample comprised 154 boys and 89 girls in Form 3. Bem's Sex-role Inventory (BSRI) was used to collect data on masculinity and femininity while students' academic scores were obtained from school records. Linear Regression analysis revealed that sex-role self-concept predicts academic performance. Sex-role self-concept also explained significant variance in academic scores. The results further showed significant difference between the academic mean scores of androgynous, masculine, feminine, and undifferentiated students. However, the androgynous students had better academic mean score than the other students. The results support the view that sex-role self-concept is a predictor of achievement than gender.

## I. INTRODUCTION

Academic performance of students is affected by myriad of factors including socio-economic status (Eamon, 2005; Selsuk, 2005; Considine & Zappala, 2002), parent-child interactions (Caro, 2014; Topor, Keane, Shelton, & Calkins, 2010), gender differences (Dayioglu & Turut-Asik, 2007; Okonna, Ushie, & Okworo, 2014), and school factors (Lawrence & Vimala, 2012; Mulliro & Martinez-Garrido, 2012; Schaps, 2005). To discern the significance of sex-role self-concept in academic performance, Orlofsky and Stake (1981) investigated the relative influence of gender and individual differences in psychological achievement, interpersonal strivings abilities and self-concepts of 176 male and female college students. The results indicated that psychological masculinity and femininity were better predictors of strivings and self-concept in the achievement and interpersonal domains than gender. Despite its significance in academic performance of students, sex-role self-concept has not been widely investigated. This paper focuses on the influence of sex-role self-concept and academic performance of students in Siaya District.

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## II. LITERATURE REVIEW

Sex-role self-concepts can be categorized as masculinity, femininity, androgynous and undifferentiated with each category having varying influence on academic performance. Androgynous persons are better adjusted psychologically, more popular, and have higher self-esteem than masculine, feminine or undifferentiated persons (Bem, 1985). The masculine component of androgyny such as independence, self-reliance and confidence is most strongly associated with psychological well being and academic performance. Flaherty and Dusek (1980) used a Multidimensional Semantic Differential Scale to assess the relationship of self-concept to sex-role and achievement. The researchers concluded that the critical dimension in Achievement-Leadership is masculinity which is linked to Instrumental-Agentive concerns while the critical dimension for Congeniality-Sociability is femininity which is linked to Expressive-Communal concerns.

Spence and Helmerich (1978) observed that individual differences in four components of achievement motivation (mastery, work, competitiveness and personal concern) are attributable to masculinity and femininity rather than to gender. Masculinity emerged as a beneficial constellation of traits for both males and females correlating positively with mastery and work. Femininity appeared to be detrimental cluster of traits for both sexes, at least in terms of academic performance. A study of 1,688 sixth, seventh, and eighth graders showed that the degree of masculinity or femininity accounts for significant portion of their school grades (Burke, 1989). In an effort to understand the relevance of sex-role orientation on non-traditional career choices, Betz and Fitzgerald (1987) posit that psychological masculinity is a critical factor in women's self-efficacy percepts and choices for nontraditional career goals and women with psychological masculinity performs better in nontraditional career choices.

Individuals with undifferentiated orientation have been found to exhibit lower self-esteem, less leadership behaviour and lower self-concept than individuals displaying feminine, masculine or androgynous orientation (Burke, 1989). The personality traits of people

with undifferentiated sex-role self-concepts may result in poor academic performance. Persons endorsing an undifferentiated sex-role orientation express few instrumental and expressive attributes and have been described as having limited repertoire of behavioural responses to situational demands and poor socialization as compared with other sex-role groups (Bem, 1985). The individuals are scared of taking risks which Rolfe (2010) identifies as a key factor in decisions concerning academics and essential ingredient for innovative mind.

Kuther (1998) noted that research findings related to sex-role differences and locus of control have been contradictory and thus suggested that observed sex differences in locus of control may instead be attributed to differences in sex-role orientation. External locus of control has been associated with a feminine sex-role orientation and internal locus of control as part of the masculine sex-role orientation (Jenkins, 2008). Inconsistent with the belief, Kapalka and Lachenmeyer (1988) study findings revealed that masculinity positively correlates with internal locus of control but femininity is not an important predictor of locus of control. Brehony and Geller (1981) observed that androgynous females were reliably higher in internal locus of control than stereotypic females. There is relationship among sex-role orientation, cognitive complexity and tolerance for ambiguity. Rotter and O'Connell (1982) study observed that male and female androgynous and cross-sexed subjects are more tolerant of ambiguity than sex-typed subjects. Cross-sexed subjects are more cognitively complex than sex-typed subjects. Cognitive complexity and intolerance to ambiguity were negatively correlated. The results indicated androgynous and cross-sexed participants were more tolerant of ambiguity than sex-typed subjects. Schroder, Driver, and Streufert (1967) characterize the person low in cognitive complexity as one who interprets ambiguity as a weakness or flaw in functioning. In contrast, a person high in cognitive complexity is characterized as one who views ambiguity positively as stimulus for generating multiple solutions.

Burke (1989) observed links between self-identified gender roles and academic performance; data consistent with the idea that students who are identified as feminine avoid school behaviour which might be considered precursor of poor performance. Smith (1992) found that increased awareness of traditional feminine norms in adolescence depress achievement in science subjects. Santos, Ursini, Ramirez, and Sanchez (2006) found that girls aged between 12 and 13 who had less feminine traits performed better in math and Rajni (2009) observed that undergraduate women whose gender identity were more male and less female performed better in math. The suppositions are supported by Faulkner (2007) observation that women in engineering experience identity conflict termed as 'gender in authenticity' and are forced to choose

between proving they are real engineers and real women.

Sex-role self-concept may correlate to career decision making self-efficacy. Arnold and Bye (1989) investigated the relationship between sex and sex-role self-concept on one hand and Career Decision Making Self-efficacy (CDMSE) on the other using data from 85 undergraduate business studies students. The results indicated that self-concept masculinity had a strong relationship with CDMSE, and self-concept femininity showed a weak positive relationship. There was a weak correlation between sex and CDMSE. Giannakos and Subich (1988) considered the sex and sex-role orientation of 765 undergraduates as related to career choice of college major. Findings of their investigation indicated that a sex-typed orientation was associated with the selection of career fields in which the respective gender is dominant. The results add further weight to evidence that sex-role self-concept outweighs biological sex in some aspects of career development.

Academic achievement involves self-efficacy beliefs which are the individual's capacities for the academic domain that contribute independently to academic achievement (Pajares & Schunk, 2001). Bandura (1993) posits that self-efficacy beliefs affect college outcomes by increasing students' motivation and persistence to master challenging academic tasks and by fostering the efficient use of acquired knowledge and skills. Torres and Solberg (2001) found positive association between academic self-efficacy and the number of hours students spent studying while Hejazi, Shahraray, Farsinejad, and Asgary (2009) demonstrated that academic self-efficacy beliefs have a mediating effect on the association between academic achievement and self-identity styles. Filipello, Sorrenti, Larcan, and Rizzo (2013) found low academic performance associated with lower self-esteem, lower decision making self-efficacy and more dysfunctional decision-making styles.

There is association between children's aggressive behaviour and their academic performance and aggression can be distinguished as overt or relational (Duncan et. al 2007). Tacher and Readick (2006) found positive correlation between aggression and creative thought patterns. The observation is inconsistent with the negative connotation of aggression that is commonly accepted in society. Helibron and Prinstein (2008) suggested that aggressive behaviour emanates out of necessity in childhood, and that individuals receive emotional and social rewards and intellectual superiority over their peers from this behaviour. Loveland, Lounsburg, Welsh, and Buboltz (2007) refute the concept that using aggression has positive outcome. Their data concluded that higher levels of aggression may negatively impact on academic performance. Tauer and Harackiewicz (2004) concluded that aggression in competition may drive an

individual to work harder and output a stronger performance than if there were no competition.

Children who are aggressive may spend relatively more time misbehaving, or being disciplined, reducing the amount of time they have to spend engaged in academic work (Duncan, et al., 2007). Stipek and Miles (2008) study confirmed the hypothesis that the effect of aggression on achievement is partially mediated by the conflictual relationships between the students and teachers. Consistent with this proposal, Coie and Dodge (1988) found that 1<sup>st</sup> and 3<sup>rd</sup> grade students who are aggressive were likely to be reprimanded by the teacher and spend less time on task than other children. Aggression, hostility, and noncompliance predicted low achievement on task behaviour in their study of 4 to 6 year old boys (Arnold, 1997). Aggressive behaviour may undermine learning indirectly because aggressive children form Conflictual relationships with teachers, which presumably diminishes the academic engagement and achievement (Silver, Measelle, Armstrong & Essex, 2005).

### III. METHOD

#### a) Research Design

The study employed survey research design to find the relationships between sex-role self-concepts of students and their academic performance. The study was based on pragmatic research philosophy which helped the research to handle the traditional dualism of positivist and social constructivist.

#### b) Sample

The study recruited 154 boys and 89 girls in secondary schools in Siaya district. The sample size for Form 3 students included in the study was determined using Raosoft sample size calculator  $p < .05$  and a representative sample of 243 students was attained. The study sampled 27 coeducational day secondary schools in the district. Students were stratified as boys and girls and purposive sampling was used identify students living with both biological parents and sat for exams for three consecutive terms in the same school while they were in Form 2.

#### c) Measures

The researcher adopted the Bem's Sex-role Inventory Femininity and Masculinity Scale (Bem, 1981). The items were scored using a five point Likert scale in which Strongly Agreed (SA), Agreed (A), Undecided (U), Disagree (D), and strongly Disagree (SD) were scored as 5, 4, 3, 2, 1. The sample mean for the students' score on masculinity was 33.58 while the sample mean for students' score on femininity was 33.56. Students' whose scores on femininity or masculinity were below one standard deviation below the sample mean were considered to be less feminine or masculine while those whose scores were above one standard deviation above

the sample mean were considered feminine or masculine. Students who were less feminine and less masculine were considered as having undifferentiated sex-role self-concept while those who were neutral on femininity or masculinity were considered androgynous.

The total score that a student could obtain in academic performance was 100% and the average academic performance of students was 50.02%. Students who scored one standard deviation below the sample mean were considered to have poor academic performance while those who scored above one standard deviation above the sample mean were considered good in academic performance. Students who scored between one standard deviation below the sample mean and one standard deviation above the sample mean were considered average in academic performance. The academic scores were standardized by converting them into T-scores to enable direct comparisons of the test scores.

#### d) Procedures

A letter of introduction stating the study topic and the proposed date of visit was given to the head teachers two weeks before research began as part of consent seeking processes. The researcher also explained the purpose of the research to the students. The participants were identified with the help of class teachers and guidance and counseling teachers. Scores on students' academic performance were obtained from the school records.

#### e) Analysis

In this study both descriptive and inferential statistics were used in data analysis. The statistical level of significance was set at .05. The data was analyzed using linear regression analysis, One Way Analysis of Variance (ANOVA), means, frequencies and standard deviation. Linear regression was used to determine the relationship between sex-role self-concept and academic performance while One Way ANOVA was used to test for significant difference between the means of academic performance of masculine, feminine, androgynous and undifferentiated students.

### IV. RESULTS

The null hypothesis stated that there is no significant relationship between sex-role self-concepts of students and their academic performance. To test this hypothesis, the students' score on sex-role self-concept and the mean academic performance of students for three consecutive terms while they were in Form 2 was calculated. The scores of the respondents on sex-role self-concept and their mean scores on academic performance were correlated using bivariate linear regression analysis. The results of the data analysis indicated that sex-role self-concepts of students significantly predicted academic scores,  $\beta = .81$ ,  $t(241)$



= 21.55  $p < .05$ . Sex-role self-concept also explained significant variance in academic scores of students,  $R^2 = .66$ ,  $F(1, 241) = 464.52$ ,  $p < .05$ . The hypothesis was tested further by comparing the mean of academic performance obtained by respondents of androgynous, masculine, feminine and undifferentiated sex-role self-concepts. The descriptive statistics (frequencies and means) of their responses are presented in Table 1.

The mean scores of academic performance obtained by students of the four types of sex-role self-

concepts were compared using one way ANOVA. The results of the analysis showed that there was a statistically significant difference in academic performance of androgynous, masculine, feminine, and undifferentiated students,  $F(3, 239) = 135.3$ ,  $p < .05$ . It was concluded that sex-role self-concepts affect academic performance of students in Siaya district. Androgynous students had better academic mean scores than masculine, feminine, and undifferentiated students.

Table 1 : Frequencies of sex-role self-concepts and Means of Academic performance

Sex-role self-concepts	Frequency	Mean Academic Performance	Standard Deviation
Androgynous	77	60.18	7.35
Masculine	41	53.4	4.98
Feminine	48	43.73	5.03
Undifferentiated	77	42.01	5.94
Total	243	50.02	9.98

## V. DISCUSSION

Sex-role self-concept was categorized as masculinity, femininity, androgynous, and undifferentiated. The results indicated that sex-role self-concepts significantly predicted academic performance and androgynous and masculine students had better academic performance than feminine and undifferentiated students. The results explicate Bem (1985) observation that it is the masculine component of androgyny such as independence, self-reliance, and self-confidence that is strongly associated with psychological well being and academic performance. The androgynous students indicate the relativistic orientation characteristic of high cognitive complexity than sex-typed persons reflecting their tolerance to ambiguity. Students who are intolerant to ambiguity lack divergent thinking and therefore resort to known methods of problem solving which compromises their academic performance. Undifferentiated orientation is associated with lower self-esteem, less leadership behaviour and lower self-concept than individuals displaying feminine, masculine or androgynous orientation (Burke, 1989). The supposition supports the low academic mean score of students identified as undifferentiated.

Jenkins (2008) asserts that masculine individuals exhibit external locus of control while feminine sex-role orientation is associated with internal locus of control. An individual with external locus of control attributes outcomes to factors outside his personal control, such as fate and luck (Weiner, 1986).

Yan and Gaier (1994) found that internal attributes of effort and ability are significantly related to academic success while Wilhite (1990) found positive correlation between locus of control and academic achievement. To the extent that persons attribute their successes externally to luck and task characteristics, they are not likely to take responsibility for their accomplishments (Erkut 1983). Furthermore, an excessive reliance on luck as a causal agent is likely to lead to reduced expectancies for success in future achievement situations. The implication of the low expectation cycle is that the students may be condemning themselves to failure through a self-fulfilling prophecy. This is possible explanation for poor academic performance of feminine students in Siaya District.

There is a relationship between self identified gender role and academic performance with students who are identified as feminine avoiding school behaviour which might be considered masculine (Burke, 1989). Some of the feminine behaviours that are likely to be inconsistent to academic work include dependence, fear to take risk, and unassertiveness which places the students in a disadvantage position as they shy off from academic environment. The observation reflects the results of the current study in which feminine students scored low academic mean score (43.73%) than masculine students (53.4%). Smith (1992) found that increased awareness of traditional feminine norms in adolescence depress achievement in science subject.

Stipek and Miles (2008) study confirmed the hypothesis that the effect of aggression on achievement is partially mediated by the conflictual relationships

between the students and teachers. Children who are aggressive may spend relatively more time misbehaving, or being disciplined, reducing the amount of time they have to spend engaged in academic work (Duncan, et al., 2007). Consistent with this proposal, Coie and Dodge (1988) found that 1<sup>st</sup> and 3<sup>rd</sup> grade students who are aggressive were likely to be reprimanded by the teacher and spend less time on task than other children. Aggressive behaviour may undermine learning indirectly because aggressive children form conflictual relationships with teachers, which presumably diminishes the academic engagement and achievement (Silver, Measelle, Armstrong & Essex, 2005). The reviewed literature supports the study results in which students who strongly agreed and agreed that they are aggressive had lower mean scores in academic performance than those who disagreed and strongly disagreed with the statement. Nevid and Rathus (2007) conclude that lack of assertiveness leads to aggression and submissiveness which are likely linked to poor academic performance. Mixed results were observed relating to submissiveness with some students who indicated that they are submissive having good academic performance than those who agreed and disagreed. Academic work requires some level submissiveness, cooperation, and attention and students who lack such qualities are unlikely to perform well. Emotional expressivity is significant to adaptive human functioning and academic performance. Akin, et al. (2011) define submissive behaviour as the inability to express one's emotions especially when someone else has conflicting needs and agrees that submissive behaviour is negatively associated with self-esteem and academic performance. Students who scored low in masculinity and femininity (undifferentiated) had the lowest mean score in academic performance (42.01%). The students are likely to over rely on emotional expressivity which is a characteristic of femininity or adopts shrinking trait, and avoids confrontation because of fear or compassion.

Students who indicated that they are assertive, self-reliant, willing to take a stand, willing to defend own beliefs, independent, and have strong personality can be described as self-efficacious. Self efficacy is related to high levels of persistence in tough tasks such as academic work (Zimmermann & Cleary, 2006). These are students who are able to remain focused on their academic work in spite of obstacles they experience during learning. They do not give up in circumstances of lack of school fees, disruptive thoughts, emotional reactions and inadequate learning materials such as books. Assertiveness encompasses multidimensional aspects of human expression including behaviour, affect, and cognition. Behaviourally assertive individuals are able to express their emotions, defend their goals and establish favourable interpersonal relationships

(Herzberger, Chan, & Katz, 1984) while cognitively and affectively assertive individuals can appropriately deal with positive and negative emotions (Gladding, 1988). Students who indicated that they are assertive also agreed that they defend own beliefs, they are independent and are willing to take a stand. However, there were mixed results among students who strongly agreed and agreed that they are willing to take a stand and those who disagreed and strongly disagreed. It is possible that some students may have found it difficult to discern taking a stand from indiscipline which negatively correlates with academic performance.

Risk taking plays important role in academic decisions. However, there were mixed results on students who indicated that they are willing to take risks and those who did not with high and low academic mean score being found in the two categories. This is possibly due to different perception of risk taking behaviour with those who perceive it to be linked to danger preferring avoidance behaviour which negatively influences their academic performance. Rolfe (2010) explains that risk taking can help people to make choices about their subjects and routes through education and careers. The students who are willing to take risks in academic decisions are able to evaluate alternative courses of action and build self-confidence. The experience of failure as a result of risk taking can help build resilience to set backs in challenging domains like academic achievement.

## VI. LIMITATION

The study had some limitations that could lend alternative explanations to academic performance of students. Firstly, intelligence partly depends on structural differences in the brain that are under very strong genetic control (Gray & Thompson, 2004). The neurobiological differences in humans include, brain weight, inter-neural connections, intra-lobal connections, blood supply in the brain, and white-gray matter ratio. Students' academic performance can therefore be explained better as an inter-play of biological and social factors. Secondly, Bem's Sex-Role Inventory seemed to conceptualize an individual as a passive recipient of societal forces (Ashmore, 1990) in the construction of sex-role self-concept. The perspective limits the possibility that an individual might interpret information in masculine but not in feminine terms, or in feminine but not masculine terms (Markus, Crane, Berstein, & Siladi, 1982). There were ambiguities in definitions of masculinities and femininity since Bem's definition of masculinity and femininity was adopted and although people may be aware of stereotypic sex differences, they do not necessarily evaluate themselves in terms of known stereotype when they fill questionnaire (Myers & Gonda, 1982). The research should have been flexible enough and allow the respondents to provide own

personal definitions of masculinity and femininity to avoid ambiguities.

## VII. CONCLUSION

Sex-role self-concept influences academic performance with androgynous students performing better than masculine, feminine and undifferentiated students. The uniqueness of androgynous students to score highly in masculinity and femininity traits gives them leverage in academic work which requires traits for both dimensions. The results of the study can be used to sensitize stakeholders in education on socialization process to enhance sex-atypical attitudes in children which will go a long way in breaking the barriers to realizing academic potentials of students attributed to sex-stereotypes.

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