The influence of Sex and Gender on English Language and Mathematics Performance: the Case of Grade 6 Pupils at Selected Primary Schools in Hwange District in Matabeleland North Province of Zimbabwe

By

Douglas Gasva
Wisdom Moyo
Research Article

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Douglas Gasva, Wisdom Moyo

Quality Assurance Coordinator, Quality Assurance Unit - Zimbabwe Open University.
Lecturer, Department of Development Studies, Faculty of Applied Social Sciences-Zimbabwe Open University.

Email: gasvad@yahoo.co.uk, Cell: +263 774 537 133

*Corresponding Author's Email: moreyour@webmail.co.za, Cell: +263 774 568 910

ABSTRACT

Whether or not sex and gender have an influence on academic performance for specific subjects or the entire school curriculum at different developmental levels of learners constitutes an exciting part in educational discourse. This study sought to investigate the influence of sex and gender on linguistic and mathematical performance at primary school level in Zimbabwe. The survey design was adopted and a case study of grade 6 pupils' academic work was used. A questionnaire and structured interviews were the research instruments used and the two instruments were considered for complementary purposes. A population of 100 teachers at 20 primary schools was used and a sample of 20 teachers from 5 primary schools in Hwange District in Matabeleland North Province of Zimbabwe was utilized for the study. Purposive sampling was used in order to capture the views of grade 6 teachers from the different schools. The study revealed that both sex and gender had an influence on linguistic and mathematical performance at primary school level. The study also noted that the differential socialization of boys and girls was the major contributing factor that influenced their behaviour which had a direct bearing on their academic performance in the studied subjects. The study recommended that social institutions particularly the home and school should expose boys and girls to the same socialisation system in order to foster equal opportunities in academic performance.

Keywords: sex, gender, linguistic and mathematical performance.

INTRODUCTION

Generally, many societies and cultures perceive sexual orientation and gender as major defining characteristics of an individual. According to Skeggs (2005), developmental psychologists in particular find sex and gender to be important and interesting aspects of human development and behaviour. Accordingly, a number of theories have been developed to explain how these aspects shape both children and adult lives. Sexual orientation and gender are characteristics not just of the individual, but also of the culture, and others perceive, behave and act in a way that depends on whether they believe they are male or female, gay or straight. Buskist (2008) states that certain individuals are born while others are socialised to behave in the way they do, and each of us has stereotypes and beliefs about how males differ from females and how gays and lesbians differ from straight individuals. The critical question is ‘are these differences important and how do these differences impact on individuals’ conduct of themselves?’ With reference to this study, the specific question is ‘How do these differences impact on individual children’s academic performance in specific subjects and/or the entire school curriculum?’
BACKGROUND TO THE STUDY

There has always been unresolved debate regarding the relationship between sexual orientation and academic performance and its related aspect of gender orientation and academic performance. Fundamentally, it is important to note that sex difference is a basic psychological factor that is rarely considered as such when discussing children’s behaviour, but it is essentially because of this factor that the psychological make-up of the child differs. Thus, sexual orientation as a variable subsequently impacts on individual children’s behaviour which may have a bearing on children’s academic performance. Kolawole (2008) notes that in some developing societies, the boy child is often socialised to be competitive and aggressive, and therefore, is expected by society to excel in the more challenging areas of school work such as Science and Mathematics. On the other hand, the girl child is taught to be passive and soft line, which consequently makes society to expect her not to excel in the more challenging school subjects and in some cases in academic performance in general.

Gender differences on the other hand tend to have great bearing on the differential socialisation of boys and girls (Haralambos and Holborn, 2000). More often than not, boys and girls are treated differently by significant others including their parents, siblings, peers and teachers. This consequently affects their behaviour which may as well have a bearing on their academic performance. According to Deasley (2005), the impact of boys’ and girls’ differential treatment by society affects several facets of their life including school performance and achievement. Based on differential gender socialisation, boys and girls are fostered to behave differently which subsequently bears on their differential academic performance. Frequently, this has had an effect on specific school subjects though a general trend may as well be discerned on how boys and girls differ in performance in the context of the entire school curriculum.

Based on related previous studies, the researchers sought to investigate the influence of sex and gender on academic performance at grade six levels with special reference to Language and Mathematics performance. Selected primary schools in Hwange District in Matabeleland North Province of Zimbabwe were used, as the researchers are currently based there.

Statement of the Problem

Children’s sexual and gender orientation are often taken for granted, yet they tend to have a bearing on their behaviour and other critical life errands like educational performance. The problem seems to warrant investigation especially in the view of the fact that there are no inherent characteristics unique to the brains of either the boy or the girl child that necessarily limit either sex’s intellectual achievement in school subjects. Whether it is the boy and girl child’s biological difference or their exposure to different socialisation processes which influences their academic performance with regards to Linguistic and Mathematical performance constitutes the problem which this study sought to explore.

Sub-Problems

In the view of the above background to the study and problem statement, the following sub- research questions were raised in order to answer the main research question:

- Does a child’s sex and gender orientation influence his or her performance in English Language and Mathematics?
- Does a child’s sex and gender influence his or her general academic performance
- Do boys or girls perform better in English Language, Mathematics and the general school curriculum?

Significance of the Study

Conducting the current study was significant in four main ways. Firstly, it clearly articulated the distinction between sex and gender which is critically the knowledge required in sex and gender planning. Secondly, it explored the relationship between a child’s sexual orientation and performance in English Language and Mathematics. Thirdly, it revealed the effect of children’s gender differences on linguistic and mathematical performance. Fourthly, the study offered recommendations for non-discriminatory socialisation of boys and girls in order to make them behave in non-stereotyped ways in order to foster equal opportunities in their academic performance and other critical life errands.
REVIEW OF RELATED LITERATURE

The Sex-Gender Dichotomy and implications for children’s behaviour

For many people, sex and gender mean the same thing. A commonly held notion is that sex and gender are exchangeable terms, yet, conceptually, these two terms are not the same, as they carry different meanings and connotations. However, as noted by Bornstein (2009), the terms ‘sex’ and ‘gender’ can have ambiguity and fluidity in meaning and implications. Sometimes it is hard to agree on exactly what sex and gender are, and more so, on how they differently impact on behaviour and other variables such as academic performance.

Sex refers to the biological characteristics between males and females, which are universal and do not change. These sets of biological characteristics are not mutually exclusive as there are individuals who have multifaceted sexual orientation, but what is critical in that it is these characteristics which robustly tend to differentiate humans as males and females. For Jenks (2008), sexual orientation entails the biological components that define and differentiate males and females that are inherited from birth. Sex is, therefore, a biological term referring to ascribed genetic, anatomical, and hormonal differences between males and females (Jenks, 2008).

On the other hand, gender refers to the socially constructed attributes, roles, values, responsibilities and needs connected to being masculine or feminine (CERMI, 2012). Henslin (2007) states that gender entails the socio-cultural roles assigned to males and females, and are determined by society through its socialisation agents, such as the family, peers or school. Thus, boys and girls learn to behave and act in certain socially prescribed ways. Henslin (2007) is of the view that gender is the result of socially constructed ideas about the behaviours, actions and roles of a particular sex. Consequently, males and females’ gender identity determines how they are perceived and how they are expected to think and act as males and females. Consequently, differential gender socialisation of boys and girls tends to have a bearing on their behaviour, including academic performance.

Perceived Influence of Sex and Gender on Academic Performance

In most human societies, sex role differentiation which silently matures into differential genderisation of boys and girls begins with sex-oriented toys purchased by parents and is reinforced as boys and girls begin to express their interests. In traditional and patriarchal societies, the girl child is generally marginalised, often as a preserve for marriage. In such societies, when girls go to school, they are not expected to compete with boys. Deasley (2005) notes that this development, often described as ‘sex typing’, tends to affect child behaviour including achievement of both sexes throughout their school years and in life in general.

Davidoff (2007) contend that as early as seven years of age, girls show low self-esteem and confidence in schoolwork than boys, and more self-esteem in relation to their social abilities such as empathy. In the school system, teachers often chastise boys for non-intellectual aspects of performance such as kindness and empathy.

Biological Explanation of Children’s Academic Performance

The view that it is ‘natural’ for males and females to behave the way they do and differently is widespread, and is supported by a diversity of scientists and researchers (Henslin, 2007). The bottom line of the consensus is the appreciation that biological science has to some reasonable extent, managed to explain human behaviour on the basis of biological disposition. Fundamentally, psycho-biologists believe that variations in behaviour and social roles of males and females can be explained in terms of hormones and brain differences. As purported by CERMI (2012), the activity of a wide range of sex hormones is closely integrated with the activity of the nervous system, and hence, hormones can influence human traits including academic performance.

Social Explanation of Children’s Academic Performance

The social world that children grow up in is comprehensively gendered. Gender differentiation is everywhere imposed by the social environment, through differential toys, clothes, hairstyles, socialisation practices and the media for boys and girls (Fagot, 2005). Consequently, children soon learn to interpret their experiences through the same set of gender categories, including, more importantly, their own sense of self. Lips (1993) cited in Spender (2000), reports that the moment a child is born, a midwife immediately starts that infant on a path, that is characteristic of a male or female by authoritatively declaring whether it is a boy or girl. Santrock (2002) notes that in most baby clinics and hospitals; an infant boy is wrapped in a blue blanket, while the infant girl is wrapped in a pink blanket, and consequently from this point on, the development path of either maleness or femaleness begins for the child.
In line with the pertinent related literature highlighted above, this study sought to find out if the genderisation of children, as well as their biological disposition of sex, tends to inform on boys and girls’ performance in Language and Mathematics at grade 6 level of the Primary School in Zimbabwe.

METHODOLOGY

In order to accomplish this study, a survey design was adopted and a case study of grade 6 pupils from selected primary schools in Hwange District in Matabeleland North Province of Zimbabwe was used. Two research instruments were used for the current study, and these were the questionnaire and structured interviews. The questionnaire was considered quite appropriate for the current study because of its many advantages over other instruments and also because of its suitability to the survey design (Silverman, 2006). Interviews were also found to be suitable as they are capable of gathering detailed descriptions of data from respondents. Due to their open-ended nature, interviews have the capacity to gather thick, large quantities and rich research data from the respondents. The researchers ensured that all respondents answered the same questions in order to obtain consistent data particularly on core issues relating to the research content.

The data gathered from this study are semi-quantitative and qualitative, and therefore enable the researchers to rely on the actual responses of the participants. Demographic data of the participants was also presented in the form of tables, and this was followed by one of the most critical aspect of the research study, namely, the presentation and discussion of research findings. A population of 100 teachers stationed at 20 primary schools in Hwange District in Matabeleland North region of Zimbabwe was used. From this population, a sample of 20 (20%) teachers stationed at 5 (25%) primary schools was utilized for the study. The sample used was found consistent of representative samples, which according to Van Dalen (1999) should be at least 10% of the target population. Purposive sampling was used in order to ensure that the views of respondents from the various schools are proportionally represented.

RESULTS

In this section, the study presented demographic data pertaining to respondents. The data considered the fundamental aspects of participants' characteristics, namely, sex, age and highest professional qualification.

| Table 1: Respondents by sex (sex frequency) |
|-------------------------------------------|
| Distribution of Respondents by sex | Frequency | % Frequency |
| Females | 11 | 55 |
| Males | 9 | 45 |
| Total | 20 | 100 |

The above table shows that there were more females (55%) than males (45%). This was noted to be somewhat consistent with the distribution of the number of female teachers who are more than male teachers in the Zimbabwean primary school sector.

| Table 2: Respondents by age (age frequency) |
|-------------------------------------------|
| Distribution of Respondents by age | Frequency | % Frequency |
| Less than 20 | 0 | 0 |
| 20-29 years | 3 | 15 |
| 30-39 years | 8 | 40 |
| 40-49 years | 6 | 30 |
| 50-59 years | 3 | 15 |
| 60 years and above | 0 | 0 |
| Total | 20 | 100 |
In the above table, 3 (15%) respondents were aged 20-29 years, 8 (40%) respondents were aged 30-39 years which is the highest subscribed while 6 (30%) respondents were in the age group 40-49 years and only 3 (15%) were aged 50-59 years. No respondent was aged below 20 years or 60 years and above. Thus, it is interesting to note that the number of respondents aged 20-29 years were the same as those aged 50-59 years, while the bulk of respondents were in the age range 30-49 years. Thus, the bulk of the respondents were mature and experienced teachers.

Table 3: Respondents by highest professional qualification (qualifications frequency)

| Highest Professional Qualifications | Frequency | % Percentage |
|-------------------------------------|-----------|-------------|
| Masters degree                      | 1         | 5           |
| Bachelors degree                    | 5         | 25          |
| Diploma/Certificate                 | 13        | 65          |
| Untrained                           | 1         | 5           |
| Total                               | 20        | 100         |

The above table shows that only 1 (5%) respondent is a Masters degree holder, which is the highest qualification held, while 5 (25%) are Bachelor's degrees holders. As many as 13 (65%) of the respondents were diploma and/or certificate holders while only 1 (5%) were untrained. Thus, the number of qualified as compared to untrained teachers is, therefore, very high, as it is as big as 95%.

**PRESENTATION AND DISCUSSION OF RESULTS**

Table 4: Influence of Sex and Gender’s on a child’s performance in Language

| A Child’s sex and gender influence on performance in Language | Yes | No |
|-------------------------------------------------------------|-----|----|
| A child’s sex influences his/her linguistic performance     | 11 (55%) | 9 (45%) |
| A child’s gender socialisation influences his/her linguistic performance | 16 (80%) | 4 (20%) |
| Both sex and gender have an influence on children’s linguistic performance | 14 (70%) | 6 (30%) |

The table above shows that 11 (55%) of the teachers think that sex influences a child’s performance in language while 9 (45%) did not think so. The table also shows that as many as 16 (80%) of the total respondents were of the view that a child’s gender socialisation influences his or her linguistic performance while only 4 (20%) were not of that view. It was also interesting to note that while two different views were noted, 14 (70%) of the respondents believed that both sex and gender influences a child’s performance in language.

Table 5: Influence of Sex and gender’s on a child’s performance in Mathematics

| A Child’s sex and gender influence on performance in Mathematics | Yes | No |
|--------------------------------------------------------------|-----|----|
| A child’s sex influences his/her linguistic performance in Mathematics | 12 (60%) | 8 (40%) |
| A child’s gender influences his/her performance in Mathematics | 17 (85%) | 3 (15%) |
| Both sex and gender have an influence on children’s mathematical performance | 14 (70%) | 6 (30%) |

The table above shows that 12 (60%) of the teachers are of the view that sex influences a child’s performance in Mathematics, while 8 (40%) are not of that view. The table also shows that as many as 17 (85%) of the respondents thought that a child’s gender influences his or her performance in Mathematics while a merely 3 (15%) did not think so. The study also revealed that while two different views have been noted, as many as 14 (70%) of the respondents believed that a combination of a child’s sex and gender influences his or her performance in Mathematics.
Table 6: Influence of sex and gender on a child’s general academic performance

| Influence of a child’s sex and gender influence on general academic performance | Yes (%) | No (%) |
|---------------------------------------------------------------------------------|--------|--------|
| A child’s sex influences his/her general academic performance                   | 11 (55) | 9 (45) |
| A child’s gender orientation influences his/her general academic performance     | 15 (75) | 5 (25) |
| Both sex and gender have an influence on children’s general academic performance | 18 (90) | 2 (10) |

The above table shows that 11 (55%) of the teachers were of the view that sex influences a child’s academic performance, while 9 (45%) were not of that view. The table also shows that 15 (75%) of the respondents thought that a child’s gender orientation influences his/her general academic performance, while 5 (25%) did not think so. The study also revealed that as many as 18 (90%) of the respondents believed that both sex and gender have a combined and complementary influence on children’s general academic performance, while a meager 2 (10%) did not believe so.

Table 7: Differential Influence of Sex and Gender on boys and girls’ performance in Language and Mathematics

| Differential Influence of sex and gender on boys and girls’ performance in Language and Mathematics | Yes (%) | No (%) |
|-------------------------------------------------------------------------------------------------|--------|--------|
| Do boys or girls generally perform better in Language at grade 6 level of the primary school     | 9 (45) | 11 (55) |
| Do boys or girls generally perform better in Mathematics at grade 6 level of the primary school | 12 (60) | 8 (40) |
| Boys or girls generally perform better in academic work                                         | 10 (50) | 10 (50) |

In the table above, 9 (45%) of the respondents agreed while 11 (55%) of the respondents disagreed that either boys or girls generally perform better in Language at grade 6 level of the primary school. A total of 12 (60%) of the respondents against 8 (40%) believed that either boys or girls generally perform better in Mathematics at grade 6 level of the primary school. The study also revealed that an equal number (50%) of respondents agreed and disagreed that either boys or girls generally perform better in academic work; that is the entire school academic curriculum. This finding is consistent with Kessler and McKeena (2004) who argue that since the full range of sex hormones is present in both males and females, it implies that hormones do not provide a clear dividing line between the sexes, and more still; hormones do not indicate differential traits such as personality and intelligence between boys and girls.

From the follow-up interviews, the study revealed that while most of the respondents disagreed that either boys or girls generally perform better in Language at grade 6 level of the primary school, some of the respondents highlighted that in most cases, girls perform better than boys in Language. As for Mathematics, while more respondents also felt that either boys or girls perform better in Mathematics, some had the feeling that in some cases however, boys perform better than girls. This is consistent with the argument that sex hormonal influences on the brain may account for the results of some related studies which appear to show that girls have greater linguistic and verbal ability than boys, while on the other hand, boys tend to perform better in spatial and mathematical tasks (Nicholas, 1993; Gray and Buffrey, 1995).

Even though respondents were generally of the view that neither boys nor girls generally perform better in specific school subjects and the general school curriculum, some highlighted that differences where girls often performed better than boys in language while boys often performed better in Mathematics may be explained with reference to gender scheming and maneuverings. It is among other factors, gender orientation in, which lead boys to outperform girls in the more challenging subjects of the school curriculum and general academic work.

**SUMMARY AND CONCLUSIONS**

The study investigated the influence of sex and gender on linguistic and mathematical performance at primary school level. It focused on grade 6 teachers’ views at selected primary schools in Hwange District in Matabeleland North.
region of Zimbabwe. The survey design was adopted for the study and a case study of grade 6 work was utilised. A sample of 20 teachers at 5 primary schools in the identified area was used to accomplish the study. Purposive sampling was used in order to capture the opinions of grade 6 teachers considering their practical experience in teaching grade 6 pupils. A questionnaire complemented by a structured interview was used as instruments to collect data from respondents. Data was presented in frequency tables, and discussed accordingly.

The study revealed that both sex and gender have an influence on linguistic and mathematical performance at grade six level of the primary school level. The study also noted that the differential gender socialization of boys and girls was the major contributing factor that influenced their behaviour and had a direct bearing on their academic performance in the studied subjects. Study results also indicated that though neither boys nor girls seemed to perform better than the other in academic work, results from follow-up interviews revealed that girls tended to perform slightly better than boys in Language while boys tended to perform slightly better than girls in Mathematics. In addition due to gender machinations and scheming, boys tend to ultimately outperform girls in the more challenging subjects of the school curriculum.

RECOMMENDATIONS

The study recommended that

- The school system should appreciate that a full range of sex hormones is present in both males and females, hence hormones do not provide a clear dividing line between the sexes, and more still; hormones do not indicate differential traits such as personality and intelligence between boys and girls.
- Social institutions particularly the home and school should not expose boys and girls to differential socialisation system, as treating them the same will serve to foster equal opportunities in academic performance.
- The national gender monitoring system in the primary school sector should be strengthened at policy level, appropriate educational resources mobilized and allocated transparently and equitably distributed to boys and girls in school. Such a development will strategically put primary school boys and girls on an equal footing regarding academic performance and achievement.

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