

## **An investigation into the relationship between learner physical self-concept and academic achievement in Zimbabwe Secondary Schools**

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**Abstract:** Low pass rates in secondary schools, a phenomenon that is of great concern to learners, parents, educators and policy makers prompted the study. Earlier studies have attributed low pass rates to human, school and material factors. Different strategies have been implemented to reverse the trend but the problem persists. It was against this background that this study was carried out to examine the role of the physical self-concept, a personality variable in the academic achievement agenda. A quantitative methodology using the Like art rating scale was employed to determine the correlation between the physical self-concept and academic achievement. Results from the study demonstrated a positive and significant relationship between the physical self-concept and academic achievement. Correlations were also computed to determine the possible influence of moderator variables such as gender, grade or form, school location and type, age and type of school attendance. The study concluded that learners' physical well-being, school location and type of attendance may have something to do with their performance in school. More research was needed with a bigger sample and in different parts of the country as well as with pupils of different ages and cultural backgrounds involved in sporting activities.

**Keywords:** physical self-concept, academic achievement, correlation, methodology, gender, learner, variable.

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### **INTRODUCTION AND BACKGROUND**

The proportion of successful 'O' level candidates who pass in five or more subjects in secondary schools has dropped significantly from 63 percent in 1980 to 19.5 percent in 2011 [1]. The high failure rate is a concern for parents, educators, educationists and the learners. Low pass rates have been attributed to poor human and material resources. It is therefore, important that further research be undertaken to find out more on the issue of under-achievement and factors related to this.

There appears to be an increasing awareness that individual differences in Intelligence (IQ) alone can no longer account for all, or even the majority of differences in learners' scholastic achievement. For example, correlations between intelligence and academic achievement declined from  $r=0.70$  in elementary school, to  $r=0.50$  in secondary school. Furthermore, such results have led to the conclusion that non-ability factors such as personality, self-efficacy beliefs and motivational variables become more important in distinguishing between the better and worse learners [2-3]. Recent evidence supports the notion that personality traits were good predictors of academic achievement [4]. Personality factor, *self-*

*concept* and its relationship with academic achievement needed further investigation.

### **SELF-CONCEPT AND ACADEMIC ACHIEVEMENT**

Self-concept is a person's self-perception gained through one's experience and interaction with the environment. It is subject to mediation by social and self-attributions. Self-concept can help in explaining and predicting behaviour. For example, when positive learners feel confident and perform better but when negative, they feel hesitant and uncertain resulting in poor performance. A positive self-concept in a specific subject domain influenced better achievement in the same subject with negative results in the other subjects because learners tended to invest more time and effort in the one subject at the expense of the others[5-6].

Self-concept was one of the causes of under-achievement by girls in Zimbabwe secondary schools[7]. Underestimation of the learners' performance had detrimental effects on the learners' self-concept of ability, motivation and test anxiety [8]. Researchers have concluded that self-concept, a personality variable, was a mediator, correlate and predictor of academic achievement[9-10].

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Currently there is very little research on physical self-concept and academic achievement of African learners, and Zimbabwe in particular hence the need for further research into the physical self-concept and its mediation with variables: gender, age, form/grade, school type, school location, and type of attendance and their relationship with academic achievement.

## LITERATURE REVIEW

### Physical self-concept and academic achievement

Satisfaction with ones' body may lead to a positive self-concept thereby increasing one's confidence in life generally, and school work as well[11-12]. For example, Xhosa youngsters had better opinions of their personal appearance[4]. Physically fit and beautiful people were generally considered as more desirable, intelligent and academically competent. Fitness training improved self-concept, and that learners who felt good physically scored higher on both self-concept and academic achievement[13]. A recent study concluded that *self-belief* appeared to make a difference to overall performance[14].

However, there was no significant correlation, and sex-age differences between physical appearance and academic achievement among rural African adolescents. There was however, a significant and positive relationship between self-concept and academic achievement of boys and girls in all age groups as well as age differences in self-concept and specific subjects. It is reported a decline in self-concept with age from elementary to high school[15-17].

Research into age, self-concept and academic achievement has yielded inconclusive results. The apparently meagre research evidence available on this subject necessitated further research.

### Physical Self-Concept and Academic Achievement

Having looked at the nature and structure of the self-concept, the following section examines the physical self-concepts and its relationship to academic achievement.

### Physical self-concept

This is one of the non-academic dimensions of self-concept which relates the perceptions about the physical abilities, interest in sport, appearance, sex, age, height, body size, complexion, clothes, home, *et cetera* [15]. According to Mwamwenda[12] psychologists are more interested in the psychological effects or implications of the physical attributes, in particular, the way peers, members of the family and learners themselves view them affects the self-concept and subsequent behaviour. For example, if the attitude towards one's body is positive, a positive self-concept will develop, and if negative a negative self-concept will develop. In other words, the reactions to our

physical attributes such as appearance, body size, maturity and activities dependent on physical skills will influence the self-concept[11-12]. Focus of this study will be on the maturity, gender, physical appearance and abilities and how they relate to academic achievement.

The idea of maturity, which is a function of one's age, will forthwith be considered in relation to self-concept and achievement.

### Maturity

According to Mwamwenda[12] the changes that occur during adolescence do not occur exactly at the same age for each adolescent. There are early, normal and late maturers whose stages of development have social, intellectual and psychological implications for adolescent boys and girls. These will be discussed in the sections that follow.

In an investigation of the relationship between age and self-concept, Wylie (in Mboya 1999:389) found no age-related influence on the overall self-concept between the ages of six and 50 years.

In related studies Mwamwenda[12] as well as it [18] describe the stage theories of development and the impact of early and late maturation on the self-concept. The results show that early maturing boys displayed more self-confidence and positive self-concepts and higher achievement than the normal and late maturing boys while early maturing girls tended to be withdrawn. Late maturing girls on the other hand appeared to be more confident and performed better in academic situations.

In a study of secondary and university learners in Nigeria, Ezeilo [19] reported an increase in self-concept with age. Research results on the relationship between age, self-concept and achievement have however, not been conclusive since some studies report a decline in the self-concept and others that the self-concept remains stable as the following examples will indicate.

Nicholls[20] reported of the decline in learners' self-concept of their academic abilities as they proceeded through school from elementary to high school. The results tend to agree with the theory that self-concept declines with age. Huitt cites an example of black children whose self-concept declined from 80% at the time of entry to the elementary school, to five percent at the time of entry to senior high school. This also confirms a report by Bell and Berube [15] which explains that as learners mature they begin to experience hostilities in the environment such that by early adolescence, many of them will believe that academic achievement will not improve their status or benefits. Consequently, they adapt to this perception by

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giving less time and energy to schoolwork. This phenomenon is called “failure avoidance behaviour”. Harter[ 21] attributes such behaviour to a decline in intrinsic motivation caused by an impersonal school environment which emphasises social comparison as opposed to mastery learning.

Mboya reports of the decline of perceptions of the self as pre-adolescent learners grow older while Engel, Dusek and Flaherty, Osborne and Le Gette report self-concept stability during this period[19].

Research findings presented above show that the results on the relationship between the physical self-concept aspect of maturity and academic achievement are inconclusive. Mwamwenda attributes the variations to cultural differences. The next section looks at gender as a variable in the physical self-concept and achievement[12].

### **Gender, learner self-concept and achievement**

According to Woolfolk, gender refers to judgements about masculinity and femininity while sex refers to the biological differences. Gender-role identity is part of our self-concept or beliefs about characteristics and behaviours associated with one’s sex as opposed to the other. Consequently, people with a feminine identity would rate themselves high on characteristics associated with females and vice-versa. Generally a masculine identity has been associated with more positive self-concepts than the feminine identity. Since research has found gender to be a significant variable in understanding students’ motivation to learn, it is important that the relationship between gender, self-concept and achievement be explored further[22].

Generally, inconsistent research findings have been reported on the relationship between gender and academic achievement and ability[23]. On the one hand there is a claim that girls in general achieve higher than boys. The examples that follow will illustrate this claim.

According to studies by Marsh et al among secondary school boys and girls aged 18 years in the former Transkei, no significant difference in performance between boys and girls in single sex schools were found [23]. In a related study Hay *et al* [24] found no major differences in the mathematics achievement in the early school years, though boys began to excel in mathematics reasoning and demonstrated higher achievement than girls through high school into adulthood. Girls were generally found to have similar literacy problems to those of boys though they tended to be more passive in the classroom and were often overlooked for remedial services. The apparent lack of difference between the self-concepts of boys and girls and their academic performance was explained by the fact that both boys and girls were exposed to education, and that the expectations of educators and parents for

both were the same. However, research results on gender and academic achievement have not always been consistent as the following examples will show.

Other studies have come up with different results for males and females. For example, in a study of Mexican-American standard seven (Grade nine) learners, report higher self-concepts and achievement for males than for females. Similar results were also reported in relation to specific self-concept domains[24]. For example, Vrey found variations in performance in mathematics by gender in which girls tended to do better than boys. Boys however, tended to excel in mathematics reasoning and demonstrated higher achievement than girls towards the end of elementary to high school and adulthood[25]. According to Marsh *et al* girls in Grade five achieved higher scores in mathematics and reading comprehension than boys while Ethington also found gender differences in mathematics achievement for American eighth grade learners[24]. These results were explained by learners’ attitudes, which were said to have a positive causal influence on achievement. For example, a learner with a positive self-concept was likely to have a positive attitude towards a task (in this case, mathematics and reading) which would in turn lead to good performance[27].

From these results it can be argued that there is no linear relationship between physical self-concept of male and female learners and their academic achievement. The next section looks at physical appearance and its relationship to academic achievement.

### **Physical appearance, learner self-concept and academic achievement**

According to Gerdes and Moore [28] the self-concept is an inclusive term for various components of the self, one of these being the body image or physical appearance. At adolescence, the physical qualities of the individual can have a considerable effect on the development of a person’s overall self-concept. In recent years, much emphasis has been placed on the physical appearance of both men and women in Western societies. Many people are concerned about their looks and the media has contributed to this state of affairs through advertisements to the effect that physically beautiful people are considered as more desirable [28].

*Physical appearance is emphasised daily through numerous advertisements... the excitement which surrounds beauty and body building competitions is further evidence of the value attached by society to physical beauty. Adolescents in particular are under the impression that good looking people are intelligent and competent among other qualities. This seems to raise their physical and academic self-concepts.*

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According to Dembo [11] there appears to be a strong correlation between self-image and body size for both boys and girls. Having an acceptable body is regarded as an important factor in evaluating oneself positively. Furthermore, reactions to one's body can lead to either a positive or a negative self-concept, which in turn can influence learning and academic achievement. For example, learners who are either too small or too big for their age group tend to be ridiculed by their peers thereby causing them to feel inferior and socially unacceptable. This often impacts negatively on their self-concepts, learning and academic achievement [28]. Several researchers have confirmed the assumption that fitness training improves the self-concept to such an extent that learners who feel good about themselves scored high on self-concept tests and were also highest on academic achievement.

Similarly, a positive body image or physical appearance may increase a person's self-concept which may in turn lead a person to feel good about his/her body [28]. Women, particularly adolescents, are easily affected by the way they and others view their bodies because the physical appearance has a strong relationship with self-concept. This in turn influences other areas of a person's life such as academic achievement and socialisation [28,11].

However, research also appears to be inconclusive regarding this aspect. There was no significant correlation found between physical appearance and academic achievement in a study of 180 girls at two rural secondary schools though there was a significant correlation with social involvement and sports participation [19] sum up the importance of physical appearance when they say:

*if you feel basically unattractive, unappealing or in some way physically inferior these self-concepts are likely to have a powerful effect on other areas of life.*

According to Mostert [28] physical appearance and physical self-concept in particular is a significant issue in the life of adolescents. Having looked at the physical appearance in general, the physical well-being will be examined for its relationship to self-concept and academic achievement.

#### **Physical well-being, self-concept and achievement**

There is a broad range of physical disabilities and health impairments which may affect the learners' educational performance. These include communication disorders, visual impairment, being hard of hearing and health impairment. The effect these have on academic achievement will be dealt with separately.

#### **Communication disorders, self-concept and academic achievement**

According to Dembo [11] speech impairments such as stuttering or impaired articulation may handicap the learner's educational performance since these often lead to poor spelling and sentence construction. This may in turn affect academic performance in language and other verbal-academic subjects due to negative interpersonal relationships and possible development of a poor self-concept by speech-impaired learners. Extensive and frequent criticism and demands for better speech production from learners who stutter may influence their self-concepts negatively and also their academic achievement.

#### **Visual impairment, self-concept and academic achievement**

Learners who are blind or partially sighted will have problems with reading and this will hinder or reduce working rate and overall performance unless special arrangements are made for special devices such as braille reading material for the totally blind or enlarged print or glasses for the partially blind. However, if such learners are expected by their educators to do the same work and their level of performance is the same as their peers, their self-concepts may be positive. The same learners will however, perceive themselves as inferior, if they are expected to perform at a lower level. This may lower their self-concepts and academic achievement as well [11].

#### **Deaf and hard of hearing, self-concept and academic achievement**

Hearing impairment affects communication and thus, social interaction since this involves communication of ideas between individuals. Failure to understand instruction may lead to inappropriate responses and academic failure. Failure by parents, educators and other professionals to understand and appreciate the hearing impaired, will influence their self-concepts negatively and lower academic achievement [11].

#### **Health impairment, self-concept and academic achievement**

Learners with health problems may exhibit limited strength or alertness and may be absent from school frequently. Some of them suffer from self-pity and over-protection resulting in their exclusion from class activities. In addition they may fail to finish certain assignments on time and may be rejected by their peers. They are often made to feel worthless and incompetent hence some educators may expect them to do less work than the others. This negatively affects their self-concepts and academic achievement [11].

#### **Summary of physical self-concept and academic achievement**

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The research results on physical self-concept described above have shown that learners with physical disabilities tend to have more negative self-concepts than their non-handicapped peers because they believe that they do not have the ability to achieve. Thus these learners have low expectations for future achievement [11]. However, it has been observed that such learners have the potential to succeed hence educators need to be sensitive to negative perceptions by these learners as they help them to succeed.

## RESEARCH DESIGN

### The research problem

The current study was quantitative which sought to answer the following research problem: *What is the relationship between learner physical self-concept and academic achievement in Zimbabwean secondary schools?*

### Research aims

In view of the afore-mentioned research problem, it was the aim of this study to investigate the relationship between learner physical self-concept and academic achievement in Zimbabwean secondary schools. In order to appreciate and understand the research problem more, the following secondary aims were investigated: The secondary aims of the study were to:

1. Determine the relationship between physical self-concept and academic achievement adolescent learners.
2. Determine the relationship between learner physical self-concept and academic achievement by gender.
3. Determine the relationship between learner physical self-concept and academic achievement by grade or form.
4. Determine the relationship between learner physical self-concept and academic achievement by type of attendance.
5. Determine learner physical self-concept and academic achievement by school location and school type.
6. Determine learner physical self-concept and academic achievement by age.

Below are specific research problems/hypotheses that emanated from the review of literature on similar topics to test the relationship between learner physical self-concept and academic achievement in Zimbabwe secondary schools.

### Hypotheses/problems

For the purposes of statistical analysis, the null-hypothesis was used to test for the significance of the relationship between learner physical self-concept and academic achievement at the 1%- or 5%-significance level. The null- and alternate hypotheses for this study are presented below.

### Research problem 1

Is there a significant correlation between the physical self-concept and academic achievement of adolescent learners?

H<sub>01</sub>: There is no significant correlation between physical self-concept and academic achievement of adolescent learners.

### Research problem 2

Is there a significant correlation between the physical self-concept and academic achievement of learners of both genders?

H<sub>02</sub>: There is no significant correlation between the physical self-concept and academic achievement of learners of both genders.

### Research problem 3

Is there a significant correlation between the physical self-concept and academic achievement of junior and middle learners?

H<sub>03</sub>: There is no significant correlation between the physical self-concept and academic achievement of junior and middle learners.

### Research problem 4

Is there a significant correlation between the physical self-concept and academic achievement of urban and rural learners?

H<sub>04</sub>: There is no correlation between the physical self-concept and academic achievement of urban and rural learners.

### Research problem 5

Is there a significant correlation between the physical self-concept and academic achievement of learners from different school types?

H<sub>05</sub>: There is no significant correlation between the physical self-concept and academic achievement of learners from different school types.

### Research problem 6

Is there a significant correlation between the physical self-concept and academic achievement of boarders and day scholars?

H<sub>06</sub>: There is no significant correlation between the physical self-concept and academic achievement of boarders and day scholars.

### Research problem 7

Is there a significant correlation between the physical self-concept and academic achievement of learners of different ages?

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H<sub>07</sub>: There is no correlation between the physical self-concept and academic achievement of learners of different ages.

## RESEARCH DESIGN AND METHOD

### Structure of the Questionnaire

This was a quantitative study. The questionnaire comprised six questions on biographical data (moderator variables) and twenty-five for the physical self-concepts.

For easy of response, there were six questions on the biographical data and moderator variables coded as follows; **gender**: male (1), female (2), **school location**: urban (1), rural (2); **school type**: government A, B, C and non-government; **type of attendance**: (boarder/day); **form/grade**: junior (1), middle (2); **age** (13 to over 16 years). For the rest of the questionnaire, responses on the five-point Likert scale applied: *Strongly Agree* (5), *Agree* (4), *Uncertain* (3) *Disagree* (2), *Strongly Disagree* (1). For questions stated in the negative, scoring was reversed such that *Strongly Agree* was scored as (1) to *Strongly Disagree* (5). The distribution and nature of the questions is presented below.

Secondly, questions on the *physical self-concept* (7-31) sought information on the respondents' physical abilities, activities, interests and appearance. There were 25 questions in all. Learners responded on a five-point Likert scale ranging from *Strongly Disagree* (1), *Disagree* (2), *Uncertain* (3), *Agree* (4) *Strongly Agree* (5).

For *physical ability*, learners were asked to rate their ability, interest in sports, games and physical activities. For example, "I am able to do physical work," "I am poor at sports". "I am often active in class."

For *physical appearance*, learners were asked to rate their attractiveness, how their appearance compared with that of others, how they thought they looked and how others thought they looked using the same scale as for physical appearance. For example, "I have an attractive face." "I would like to change some parts of my body." "I am happy with my body size."

### Content and face validity

Content and face validity were addressed using the judgement of an established researcher who is knowledgeable on the whole issue of self-concept. Reliability of the questionnaire was determined by a Cronbach Alpha correlation coefficient. Cronbach Alpha is a measure of internal consistency (reliability) of what questions are meant to measure or describe, in this case self-concept domains. Coefficients ranged from 0.73 to 0.84 and were within the acceptable range

of 0.65 to 0.90 for personality attributes such as *self-concept*. [29].

### Ethical issues

Permission to administer the questionnaire was sought from the Ministry of Education, Sport, Culture and Arts' Head Office, regional offices and heads of schools and parents. Individual participants were told that participation was optional. The purpose of the study was explained.

### Procedure

Twenty above-and below average learners were selected at each school respectively. For mixed ability classes, the top twenty and bottom twenty were selected for the study. School records were used to identify the level of ability of the learners. Participants were given two sheets of paper, one containing the questions and the other, the answer sheet. Each participant was asked to indicate their response to each question by writing down a number in the box corresponding to the chosen response on the answer sheet B. Participants were asked to respond to self-concept questions expressing how they felt about themselves physically and their academic achievement in school as a whole. Participants were asked to answer every question as truthfully as possible. Instructions on how to complete the questionnaire were also read out to the participants to ensure that there was no misinterpretation of what they were expected to do. Questions raised were answered to clarify any concerns. All the questionnaires and answer sheets were collected at the end of the exercise. The questionnaire was self-administered and took between 5 to 10 minutes to complete. Participants were thanked for their co-operation and participation.

### Reliability

An instrument such as a questionnaire is said to be reliable to the extent that, independent administrations of it or a comparable instrument consistently yields the same or similar results. Thus, the more reliable the instruments and measurements, the more consistent and dependable will the results be. While several procedures exist for establishing reliability such as test-re-test, and the split-half methods, the split half is the most commonly used in educational research. The current study employed the Cronbach Alpha reliability coefficient, which is the most suitable where questionnaires are analysed using statistical software such as the SPSS, and also where the responses are not scored as either right or wrong, and there is a range of possible answers for each question. McMillan and Schumacher sum up the suitability of the Cronbach Alpha reliability coefficient as follows [30]:

... It is used for items that are not scored right or wrong, appropriate for survey research and other

questionnaires in which there is a range of possible answers for each item.

In the current study, the researcher attempted to increase reliability by having a large number of questions, in this case, 25 questions for physical self-concept dimension excluding those seeking biographical data. In addition, the researcher collected data from a heterogeneous group in terms of academic achievement. High and low academic performers formed the sample for this study, an arrangement which was intended to increase the reliability of the research findings.

*The more heterogeneous a group is on the trait that is measured or the greater the range of scores, the higher the reliability [30].*

Furthermore, the researcher has already indicated that he used the tried and tested *Self-Description Questionnaire* scales whose reliability has been established. For example, measures of academic achievement have a high reliability of between 0.70 and .90, while personality has lower reliability of 0.65 and 0.90. Since the current study was on the personality attribute of self-concept, reliabilities of between 0.65 and 0.90 were acceptable. For the current study, reliability coefficient for the physical self-concept was 0.84. Concern for reliability was important in the current study because reliability was a necessary condition for validity. Consequently, without reliability there can be no valid results [30].

#### Analysis of quantitative data

The statistical procedure chosen for any study depends on the research question, types of groups one is dealing with, the number of variables and the scale of measurement [31]. The data collected under the quantitative design was in quantity form. The Statistical Package for Social Scientists (SPSS) was used to analyse the data. The data collected guided the researcher on the form of statistical test(s) to be used.

In accordance with the stated aims, hypotheses and research questions of the current study, the following statistical analysis techniques were used. The mean and standard deviation of the physical self-concept domain were calculated.

For the purposes of describing the learners' physical self-concept, the following analyses were carried out:

*Mean physical self-concept score.* The sum of scores of responses to the physical self-concept divided by the number of respondents questions.

The *Pearson Product Moment Correlation Coefficient* was computed in order to determine the direction of the

relationship between the physical self-concept and academic achievement of adolescent learners in secondary schools in the selected Zimbabwe secondary schools. This enabled the testing of each one of the research questions and hypotheses and to reject or accept the null-hypotheses at the 5%- and 1%-confidence levels. The following section presents the results of the study.

## RESULTS

Research problem 1

H<sub>01</sub> There is no significant correlation between the physical self-concept and academic achievement of adolescent learners.

**Pearson's correlation coefficient was computed to test this hypothesis. The results appear in table 1.**

**Table 1 Correlations between physical self-concepts and academic achievement**

Factors	Correlations	Significance
Physical self-concept and academic achievement	.122	p<0.01

Table 1 shows that the physical (r=.122, p<0.01), self-concept is significantly and positively correlated with the academic achievement of adolescent learners. The null-hypothesis is therefore rejected at the 1%-level of significance for the physical self-concept.

Research problem 2

Is there a significant correlation between the physical self-concepts and academic achievement of learners of both genders?

H<sub>02</sub> There is no significant correlation between the physical self-concept and academic achievement of male and female learners separately.

**Correlations were calculated and the results are presented in table 2.**

**Table 2 Correlations between the physical self-concept and academic achievement of male and female learners.**

Factors	Correlation with Achievement	Physical self-concept
Male Achievement	1	.195**
Physical	.195**	1
Female Achievement	1	.064
Physical	.064	1

\*\* = correlation is significant (p<0.01)

Information in **table 2** shows that there is a positive and significant correlation between the physical self-concept and academic achievement of male learners, but not for females. The null-hypothesis was therefore rejected on the 1%-level of significance for the correlations between achievement and the physical self-concept for males only.

The results imply that an improvement in physical abilities may enhance feelings of academic competence and academic achievement as well.

### Research problem 3

Is there a significant correlation between physical self-concept and academic achievement of junior and middle learners?

H<sub>03</sub> there is no significant correlation between the physical self-concepts and academic achievement of junior and senior learners. The results are presented in **table 3**.

**Table 3 Correlations between physical self-concepts and academic achievement of junior and middle learners**

Factors	Correlation with Achievement	Physical self-concept
Junior Achievement	1	.150**
Physical	.150**	1
Middle Achievement	1	.078
Physical	.078	1

\*\* = Correlation is significant at the 0.01 level (p<0.01)

\* = Correlation is significant at the level 0.05 (p<0.05)

The results in **table 3** show that there was a significant and positive correlation between the physical self-concept and academic achievement of junior learners. For the middle learners, the correlations did not reach statistical significance. Consequently the null-hypothesis was rejected at the 1%-level of significance for the physical self-concept and academic achievement of the junior learners.

The results may suggest that possible physical ability and well-being may have a positive effect on the achievement of the younger learners than the more mature adolescents.

### Research problem 4

Is there a significant correlation between the physical self-concepts and academic achievement of urban and rural learners?

H<sub>04</sub> There is no correlation between the physical self-concepts and academic achievement of urban and rural learners. The hypothesis was tested statistically and the results appear in **table 4**.

**Table 4: Correlations between self-concepts and academic achievement of urban and rural learners**

Factors	Correlation with Achievement	Physical self-concept
Urban Achievement	1	.084*
Physical	.084*	1
Rural Achievement	1	.163**
Physical	.163**	1

\*\* = Correlation is significant at the 0.01 level (p<0.01)

\* = Correlation is significant at the level 0.05 (p<0.05)

According to **table 4** the correlations between the physical self-concept and academic achievement of urban and rural learners were significant and positive. The rural learners recorded relatively higher correlations than the urban learners suggesting a possible better physical well-being and stronger influence on the learners' academic achievement. The null-hypothesis was rejected at the 1% and 5%-levels for the physical self-concept of rural and urban learners respectively. Correlations for both groups were moderate. The results seemed to suggest that increased involvement in sporting activities may improve social relations which in turn lead to better cognitive self-concept and academic achievement for urban learners and *vice versa*. The correlations were even higher for learners in rural schools.

### Research problem 5

Is there a significant correlation between the physical self-concepts and academic achievement of learners from different school types?

H<sub>05</sub> There is no significant correlation between the physical self-concepts and academic achievement of learners from different school types. The results after testing the hypothesis are presented in **table 5**.



**Table 5 Correlations between the physical self-concept and achievement of learners in different school types**

Factors	Correlations with Achievement	Physical self-concept
Government A Achievement	1	.251**
Physical	.251**	1
Government B Achievement	1	.161**
Physical	.161**	1
Government C Achievement	1	.148**
Physical	.148**	1
Non-Government Achievement	1	.093
Physical	.093	1

\*\* = Correlation is significant at the 0.01 level ( $p < 0.01$ )

\* = Correlation is significant at the level 0.05 ( $p < 0.05$ )

Table 5 indicates that the physical self-concept significantly and positively correlated with academic achievement of learners in Government A, B and C schools. The null-hypothesis was rejected on the 1% level of significance. Correlation for non-government schools did not reach statistical significance though it was positive.

The results indicate that the school one attended might influence both the physical well-being and academic achievement in some way.

For non-government schools the relationship was, however, low. The results implied that an improvement in the physical fitness and ability of the learners in the rural secondary schools was likely to

lead to better academic achievement. Similarly, an improvement in their involvement in physical activities such as sports was likely to improve physical fitness, positive feelings and possibly better academic achievement.

#### Research problem 6

Is there a significant correlation between the physical self-concept and academic achievement of boarders and day scholars.

H<sub>06</sub>: There is no significant correlation between the physical self-concepts and academic achievement of boarders and day scholars. A two-tailed Pearson's correlation coefficient test was administered and the results are shown in **table 6**.

**Table 6 Correlations between physical self-concepts and academic achievement of boarders and day scholars**

Factors	Correlation with Achievement	Physical self-concept
Boarders Achievement	1	.177**
Physical	.177**	1
Day Scholars Achievement	1	.132**
Physical	.132**	1

\*\* = Correlation is significant at the 0.01 level ( $p < 0.01$ )

\* = Correlation is significant at the level 0.05 ( $p < 0.05$ )

The results show that the physical self-concept was significantly and positively correlated with the academic achievement of boarders and day scholars. Boarders had the higher correlation with academic achievement. The correlation coefficients were higher for the boarders suggesting a better learning

environment than for the day scholars. The null-hypothesis was rejected at the 1%-level of significance.

#### Research problem 7

Is there a significant correlation between the physical self-concept and academic achievement of learners of different ages?

H<sub>07</sub> There is no significant correlation between the physical self-concepts and academic achievement of

learners of different ages. Results of a two-tailed Pearson's correlation test are given in **table 7**.

**Table 7 Correlations between the physical self-concept and academic achievement of learners of different ages**

Factors	Correlation with Achievement	Physical self-concept
13 Years Achievement	1	.269**
Physical	.269**	1
14 Years Achievement	1	.163**
Physical	.163**	1
15 Years Achievement	1	.033
Physical	.033	1
16 Years Achievement	1	.108
Physical	.108	1
Older than 16 Achievement	1	.037
Physical	.037	1

\*\* = Correlation is significant at the 0.01 level (p<0.01)

\* = Correlation is significant at the level 0.05 (p<0.05)

The results indicated that there was a low to moderate, positive and significant correlation between the physical self-concept and academic achievement of learners aged 13 and 14 years. The null-hypothesis was therefore rejected at the 1%-level of significance. The results may suggest that the more positive the 13 and 14 year olds feel about their physical selves, the better their academic performance.

For the 16-year-old learners, correlations did not reach statistical significance though they were positive.

#### **Physical self-concept, academic achievement and gender**

The results have shown that participation and competence in physical activities, as well as a good appearance tended to enhance academic competence, achievement and confidence in whatever the learners did. There was a significant relationship between the physical self-concept and academic achievement of males. This might be due to the fact that male learners more often volunteer participation in sports than females do. The results were in accordance with literature findings [28, 22, 12, 19] who reported physical fitness and participation in sports as contributing to a positive self-concept and improved performance in school. It was expected that physical appearance would correlate significantly with females'

academic performance but this was not the case. Furthermore, by enhancing the physical self-concept one was likely to improve social relations through participation and interaction in sports which in turn raised academic achievement as well.

Physical attributes and involvement in sports and feeling good about their appearance or body image were significantly correlated with academic achievement for all government school learners, but not for non-government learners. Government schools tended to have a full sports programme for the whole year while non-government schools tended to emphasise academic work much more in terms of resources - human, material and time. This might explain the differences.

#### **Physical self-concepts, academic achievement and grade or form**

It was interesting to note that the physical self-concept was positively and significantly related to the academic performance of junior learners. The results seemed to suggest that the way junior learners reacted to the physical challenges and feedback to their academic activities may have some influence on their performance in school. Basing on these results, it would appear that the changes the junior learners experienced on transition from the primary school to the secondary

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school may have had a significant influence on the way they perceived their physical selves.

Later, learners appeared to be more stable and relied more on intrinsic than extrinsic motivation for their learning and academic achievement. This was demonstrated by weaker correlations.

From the above it seemed that age might influence academic achievement and physical self-concept.

#### **Physical self-concepts, academic achievement of urban and rural learners**

Results have shown that a positive and significant relationship existed between the physical self-concepts and academic achievement of urban and rural learners. The results were in agreement with earlier literature findings by [11, 32, 19]. Literature has already indicated that feeling good about one's body or physical attributes contributed towards a positive physical self-concept which in turn improved academic achievement.

The relationship was stronger for the rural than urban learners. This implied that, by enhancing the physical self-concepts, feelings about the learners' academic competence were also improved leading to better academic achievement.

#### **Physical self-concepts, academic achievement of learners in different school types**

The study revealed significant differences between the overall academic achievement of learners in different school types and also their physical self-concepts. Learners in non-government schools had the highest average test scores because they recruited high achievers from the whole country. They however, registered the lowest average physical self-concept scores. This might be due to the low emphasis on sporting activities, anxiety to succeed and feelings of inadequacy in these highly and academically competitive schools. On the other hand, learners in Government C schools performed the lowest academically, possibly because they recruited learners from the locality regardless of past performance or ability. They were however, better than non-government schools in the physical self-concepts. This might explain the differences in overall academic performance. However, Government B schools which registered the highest average scores for the physical self-concept domain appeared to offer the best environment for developing the learners' self-concepts. Average academic performance was lower probably because of the wide range of abilities of the learners they recruited. An earlier study had also shown significant differences in academic performance between government and non-government schools [29].

Literature and empirical evidence have shown that the school one attended, whether it was high or low achieving, played a significant role in shaping the learners' self-concepts and their academic achievement [11].

The findings of the present study suggested that, the current practice by some parents to choose the schools or transfer their children from one school to another, "better" school was wise and likely to be beneficial to their children in terms of raising their physical self-concepts and academic achievement.

#### **Physical self-concept, academic achievement and learners of different ages**

The literature and empirical evidence have shown that the relationship between physical self-concept and academic achievement declines with age. In the current study, correlations between academic achievement and the physical self-concept was significant.

As learners grow older a decline in self-concept is experienced. Results supported earlier findings in a study in Nigeria reported an increase of physical self-concept with age [11].

Overall, the results of this study showed that age had some influence on the physical self-concept and academic achievement though evidence was weak. Results agreed with [23] who reported a significant relationship between age and scholastic achievement suggesting a weak influence because of the low correlation coefficient.

#### **Physical self-concept, academic achievement of boarders and day scholars**

The study shows significant and positive relationship between the academic achievement and the physical self-concept of both day scholars and boarders. This implied that the type of attendance, as boarders or day scholar had some influence on shaping the physical self-concepts of the adolescent learners. Since average correlation coefficients and mean mark are higher for boarders, it can be safely concluded that boarding schools offered better conditions for shaping the learners' physical self-concept leading to better academic achievement. The results supported earlier findings that school attended shaped the self-concept of learners in specific physical self-concept domain and not the general self-concept [11]. Type of attendance as a boarder or day scholar had a significant impact on the physical self-concepts.

#### **CONCLUSIONS**

Conclusions regarding the relationship between physical self-concept and academic achievement are presented below.

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Therefore, the way learners feel about themselves generally and physically may have some influence on their performance in school. Though the relationships were statistically weak, the results appeared to be truly representative of adolescent learners in Zimbabwe secondary schools in the area studied. Thus, given the *physical* self-concepts, one might be able to predict the level of academic achievement of adolescent learners with a fair amount of confidence. The results were supported by earlier research findings.

#### Physical self-concept and academic achievement

The study also revealed that the learners' who felt good and confident about their general wellbeing, physical fitness, participation and competence in sports had positive physical self-concepts which raised their academic performance. Similarly, learners who were satisfied with their physical appearance or body image in general tended to feel more confident in whatever they did including schoolwork. Therefore, participation in school sporting activities tended to improve the learners' physical self-concepts and academic achievements through good physical and mental fitness, time management, self-discipline skills and the confidence they gained. Thus, there appeared to be academic gains from well organized sports, and participation in school sports involving all the learners. In addition, schools that had physical education programmes for all the learners stood to benefit from better overall pass rates and better results for individual learners. Correlations between the physical self-concept and academic achievement were not consistent for all the moderator variables. Consequently, the relationship could not be generalised. Only the school location (urban/rural) and type of attendance (day/boarder) did correlate with both variables.

#### RECOMMENDATIONS

##### **Recommendations to improve academic achievement and physical self-concepts of secondary school learners**

In the light of the research methodology used, the study's subsequent findings and conclusions, recommendations were made to improve the academic achievement and physical self-concepts of secondary school learners in Zimbabwe. The recommendations sought to complement existing strategies such as improving the supply of educators, textbooks and administrative capabilities. The information comprised practical considerations for educational practitioners and other stakeholders in education to enable them to deal with the problem of underachievement of adolescent learners in secondary schools by paying attention to their self-concepts. The recommendations were not listed in any order of importance. The information might also be of some use to other researchers on physical self-concept and achievement in future.

#### Participation in physical activities

The study has demonstrated that the physical self-concept was positively and significantly associated with academic achievement. Evidence from interviews has also shown that learners strongly believed that participation and competence in physical activities improved self-confidence, physical and mental health, concentration and performance in school. The same applied to a satisfactory body image. In view of these findings, it was recommended that participation in sports or physical education be made compulsory for every adolescent learner in every school.

#### RECOMMENDATIONS FOR FUTURE RESEARCH

##### **Recommendations**

In the light of the research methodology used, and the study's subsequent findings, recommendations were offered for further research on the physical self-concept and academic achievement. The recommendations are not listed in any order of importance.

##### **Recommendation 1**

Researchers in the area of physical self-concept and academic achievement should also undertake longitudinal and intervention studies which involve testing the learners in schools in order to determine causation. These include tracer studies for learners at different levels from Form one to Four and beyond. This would enable the generation of more information on the relationship between age, physical self-concept and academic achievement.

##### **Recommendation 2**

Research by Mostert [28] agrees with findings of the current study that there is no relationship between the physical self-concept of girls and their academic achievement. This can be explained by the apparent reluctance by girls to participate in physical activities such as sports or physical training. It is recommended that further studies involving learners actively involved in sports at school and those not involved be carried out for both males and females. Similarly, some investigation can be carried out with learners in schools where sports or physical training or education are compulsory for every learner in order to find out the relationship between the self-concept and academic achievement.

##### **Recommendation 3**

School type emerged as a strong variable in its relationship with physical self-concept and academic achievement. More research needs to be carried out to determine causation so that specific advice can be offered to educators on how they can improve the physical self-concept and academic achievement in different school types.

##### **Recommendation 4**

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Since this was the first exploratory multidimensional study on physical self-concept and academic achievement in Zimbabwe, replication studies can be carried out focusing on one of the following moderator variables: gender, form/grade, age, school type and location, and type of attendance for the relationship between, physical self-concept and academic achievement.

#### Recommendation 5

Finally the investigation used school based test scores as measures of academic achievement and the scales used general measures of the physical. The use of standardised measures would have enhanced the reliability of the study making comparisons of achievement and conclusions more meaningful. In addition, using grades instead of the actual marks would have generated stronger correlations. Consequently, future research should address these methodological weaknesses. The following section presents the limitations to the current study. However, despite these weaknesses the strength of the correlations and the levels of significance for the current study, are such that the results reflect the way physical self-concept relates to the academic achievement of adolescents in Zimbabwe secondary schools.

#### LIMITATIONS

Although the present study provides support to several theoretical propositions about the relationship between the physical self-concept and academic achievement, certain limitations should be noted.

First, randomisation was not used for this study as recommended in literature for rigour in sampling. Instead, the study used purposive sampling. This was preferred because of the varied nature of schools and school population in Zimbabwe, and the need to include both high and low achievers in the sample. The use of randomisation may have led to failure to meet this requirement in reasonable proportions. However, despite the use of purposive sampling the level of significance reached for the results is strong enough to make the results reliable and make them a true reflection of the situation in Zimbabwe secondary schools. Schools provided participants in response to the researcher's specifications. The researcher believed the learners provided were a true representation of what he had specified.

Secondly, the scales used to measure the physical self-concepts consisted of global factors without going into the finer details of each. For example, for physical self-concept, no attempt was made to look at each part of the body from head to toe in order to find out how the learners felt about each one of them. Consequently, the respondents may have given

what they felt generally instead of specific parts of the body and then getting the average score. Even without this detail, it is felt that the results arrived at were a reasonable reflection of what the learners felt about their physical attributes and abilities.

Thirdly, the sample comprised learners from urban and rural areas, Government (A, B & C), Non-government, boarding and day schools who were in Forms one to four. This is the general character of schools in Zimbabwe. Though the participants came from Harare and Mashonaland East alone, the results are likely to reflect the situation in Zimbabwe as a whole.

Fourthly, for achievement, school based test scores were used for the five compulsory subjects: English Language, mathematics, history, science and Shona/Ndebele. The average score for the five subjects was used as a measure of each learner's achievement. School based tests have been known to lack validity and reliability or representativeness due to scoring procedures and administration. Consequently, consistency could not be guaranteed from school to school, form to form and learner to learner.

Fifthly, the study was exploratory in nature, namely, to investigate the relationship between physical self-concept and academic achievement among adolescent learners in secondary schools. The study did not seek to investigate causation. Therefore, in interpreting the results focus should be more on whether or not there was a significant relationship between the learners' physical self-concepts and academic achievement.

Despite the limitations outlined above, the outcomes of this study offered a reasonable basis to believe that physical self-concept played a significant role in the academic achievement of adolescent learners in Zimbabwe secondary schools. As a multi-dimensional study of the physical self-concept, the study offered further opportunities for further exploratory and longitudinal studies on the nature of influence of the physical self-concept domain on academic achievement. In addition results of the study were likely to stimulate debate in schools and the communities on the role of the physical self-concept on the academic achievement of the learners. The study clearly showed that parents could no longer expect the educators to do everything to motivate the learners to achieve. They had a crucial supportive and complementary role in physical self-concept development to promote higher academic achievement.

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