



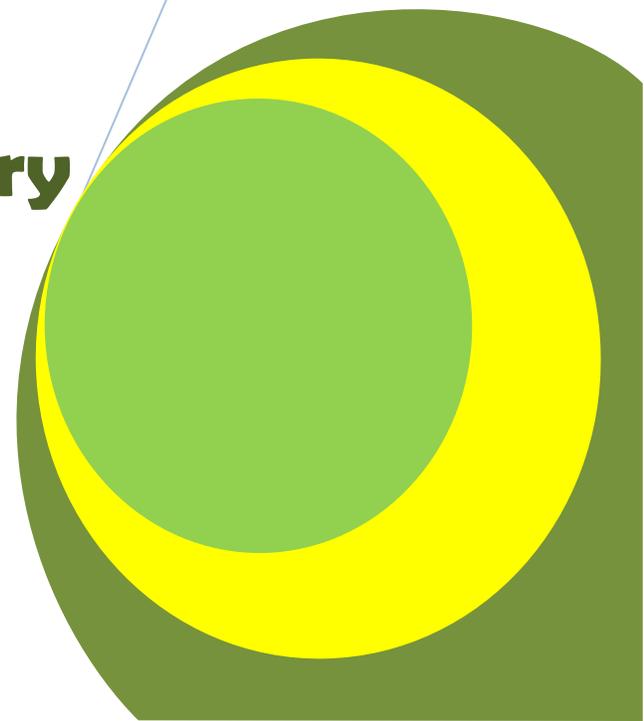
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Factors in Academic Achievement: Do Moderator Variables Account for any Significant Differences in Emotional Self-Concepts and Academic Achievement of Adolescents in Secondary Schools?

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Research Article

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ABSTRACT

Low academic achievement and the need to search for factors influencing performance, explanations such as poor teacher quality, resources, low level of teacher motivation and commitment, poor supervision, discipline, political interference, lack of parental support have been advanced. Little if any attention has been given to personality factors such as self-concept. Previous research has demonstrated a positive and significant correlation between emotional self-concept and academic achievement and that of emotional self-concept and school type, location and type of attendance. It was the objective of this study to investigate the possible contribution of moderator variables-gender, age, grade/form, and school location type, type of attendance to learner academic achievement in secondary schools. In particular the study sought to find out the extent to which the moderator variables contributed to differences in learner emotional self-concepts and academic achievement in secondary schools. Quantitative and qualitative methodologies were used for the study involving 1281 high and low performers in secondary schools. Results showed that age, school type and type of attendance accounted for significant differences in both academic achievement and emotional self-concepts. School location and grade/form contributed to difference in emotional self-concepts only while gender accounted for no differences at all. The study concluded that the current practice by some parents to send their children to boarding schools and transfer from one school to the other better school was wise and beneficial for the academic and emotional welfare of their children. Instilling better attitudes towards school work at an earlier age was likely to have long term benefits for the child's education. Gender accounted for no differences in either emotional self-concepts or academic achievement. Further research is required in different subjects and overall with a larger sample in different locations.

Keywords: Emotional self-concept, academic achievement, gender, school location, type of attendance, age, variables, learner, moderator, significant, personality, boarding, school, quantitative, qualitative, grade, form, secondary.

INTRODUCTION

The Zimbabwe 2012 Ordinary level examination results were released in early February, 2013. The results showed a slight drop in the overall pass rate from 19.5% in 2011 to 18.4%. Considerable debate ensued with outcries of falling standards of education, proliferation of untrained teachers in the schools, poor resources, low level of teacher commitment due to poor working conditions, poor quality teachers poor supervision, extra lessons which yielded nothing but poor results, poor discipline, political interference, lack of parental support for children's learning, inappropriate curriculum among other reasons. (Education, National News, 6/02/2013). In the same publication the Minister of Education, Arts, Sports and Culture, David Coltart attributed the drop in pass rate to a crisis in education following the 2005 – 2009 economic meltdown during which more than 20 000 teachers left the country leading to the loss of many teaching days hence poor results now. The myriad of reasons advanced by many in our society emphasizes the gravity of the learners' achievement rate and the seriousness with which education is viewed by people in the country. Yet others passed very well under the adverse conditions. It is therefore, imperative to continue the search for causes of low academic achievement to enable more and more children to achieve higher and better results. From the information outlined above, it is clear that low pass rate has been attributed to school and out of school factors and very little if any to learners' personality factor. Research has documented the importance of personality factor, self-concept for academic achievement. (Craven & Marsh, 1996; Dembo, 1994; Hamachek, 1995; Mwamwenda, 1995; Urhahne, Chao, Florineth, Luttenberger and Paechter, 2011; PRIXTEN, De

Fraine, Van Damme, D'Haenens, 2010; Marsh & O'mara, 2008; Hau & Kong, 2002). Very little or no research has been carried out on the relationship between personality factors such as emotional self concept and academic achievement in Zimbabwe. Furthermore, no such research has focused on the role of moderator variables; gender, grade/form, school location and type, age and type of attendance on learning and achievement. In view of the above, the study sought to investigate the role of moderator variables on emotional self-concept and academic achievement to determine possible influence on educational achievement and to add literature on the subject in order to understand further influences on academic achievement. The following section examines literature on emotional self-concept and academic achievement.

LITERATURE REVIEW

Emotional Self-concept

According to McGrath and Repetti (2000:714) emotional self-concept refers to feelings such as depression, anxiety, and anger one has about oneself in a given situation. It is part of the non-academic self-concept. Kobal-Palcic and Musek (1996:65) describe emotional self-concept in terms of emotional stability or perceptions about oneself as being calm or relaxed or how much one worried or got excited. Bandura (in Semakane, 1994:12) simply describes emotional self-concept as experiences one goes through while performing or approaching a task which enables one to judge one's capabilities.

Emotional self-concept and Academic Achievement

The possibility that emotions can influence learning, academic achievement and well-being have stimulated considerable research in recent years. (Efklides & Violet, 2005; Linnenbrink, 2006; Schutz & Lavehart, 2002; Schutz & Pekrun, 2007 cited by Ahmed, Werf, Minnaert and Kuyper 2010). Consequently, researchers have explored further, the antecedents and consequences of emotions in academic settings. (Pekrun, Coetz, Titz & Perry, 2002 cited in Ahmed *et al.*, 2010). Similarly, Ahmed *et al.* (2010) in a study of emotions in the classroom concluded that learners' competence and *value-belief* appraisals determined the nature of achievement emotions. They found gender differences in mathematics related emotions. The emotions were however, context specific according to the *control-value theory* of achievement emotions. (Pekrun, 2006 in Ahmed *et al.*, 2010). This may suggest conditions in the school or classroom hence the type of school and relationships with peers in learning contexts may be very important considerations. *Control* was about whether the learner felt able to tackle a curricular task while *value* referred to whether the learner perceived achievement as important to him or her. An imbalance between perceived capabilities and academic achievement was likely to trigger test anxiety, worry and emotionality. (Liebert & Harris, 1967 in Urhahne *et al.*, 2011). This would depend on the quality of interaction between the educator and learners. The *value* system determined the level of motivation with which the learner approached tasks in school. Teaching approaches planned and implemented may play a critical role in this regard. Motivation could be intrinsic (from within) or extrinsic (from external factors). Appraisal of a task as important to the learner for its own sake (intrinsic) or for a reward, a better job or admission to higher level of education (extrinsic) determined the learner's emotions in any given situation and had a bearing on achievement. These observations have important implications for education because higher levels of competence beliefs were generally associated with higher levels of positive emotions (enjoyment, happiness, hope and pride) while lower beliefs were associated with negative emotions (anger, anxiety, hopelessness). The learners' competence and value beliefs determined achievement. Interventions that target learners' socio-emotional competence should always consider individual differences because improving emotion-related self-beliefs may lead to successful adaptation at school and improved peer status. Individual differences included, the age, level of performance, social background and learning styles. The relationship was reciprocal. (Mavroveli & Sanchez-Ruiz, 2011).

Studies on the relationship between emotional self-concept and academic achievement reported that strong and negative emotions such as anxiety and depression were associated with under-achievement because they tended to reduce motivation to work while positive emotions such as excitement, enjoyment and happiness raised motivation and satisfaction leading to better academic achievement. (Brogan, 1998; Fontana, 1997; Strongman, 1996). However, small amounts of anxiety appeared to be motivational, raised confidence and academic achievement as well. (Dembo, 1994; Strongman, 1996). The study sought to add to the limited literature and our understanding of the role of moderator variables such as gender, grade/form, school location and type, age and type of attendance on learner emotional self-concept and academic achievement and education in general. Gender and age were personal factors while grade/form, school location and type, and type of attendance environmental factors. To what extent do these factors account for differences in emotional self-concept and academic achievement in secondary schools?

Emotional self-concept

According to McGrath and Repetti (2000:714) emotional self-concept refers to feelings such as depression, anxiety, and anger one has about oneself in a given situation. It is part of the non-academic self-concept. Kobal-Palcic and Musek (1996:65) describe emotional self-concept in terms of emotional stability or perceptions about oneself as being calm or relaxed or how much one worried or got excited. Bandura (in Semakane, 1994:12) simply describes emotional self-concept as experiences one goes through while performing or approaching a task which enables one to judge one's capabilities.

Emotional intelligence (EI)

Baron (in AbiSamra, 2000:6) sees emotional intelligence as the ability to deal with other people and with one's feelings. Broadfoot (1998:25) points out the need for educators to recognise what makes one learner more keen and successful and the other less successful. She attributes this to the learner's emotional intelligence as much as his/her intellectual abilities.

In a study of the relationship between emotional intelligence and academic success, AbiSamra (2000:6) reports that emotions, feelings and values were vital for a person's well-being and achievement in life. Quality emotions and feelings, he argues, help students give their best in the classroom. For example, learners who were aversive and thought negatively could not concentrate for a long time and had more difficulties in reaching their potential than those who were positive.

Nakamura and Seligman (in Fontana, 1997:34) report of positive emotions which are normally responsible for positive effort and performance. Such learners were free from inhibiting emotional factors. However, emotions do not always bring about positive self-concepts, as the following examples will show.

Goldam-Rakit and Tammingo (in Fontana, 1997:340) in a report on emotional intelligence demonstrate that the power of strong emotions such as anxiety and anger can inhibit the working memory thereby negatively affecting learning and achievement. Poor performance may lead to depression which will be discussed in the following section.

Depression

In a study of the interaction between academic achievement and self-concept, Brogan (1998:3) points out that feeling worthless can lead to depression, and that depression can inhibit performance. She went on to remark that if a learner does not feel worthwhile he/she may not feel like doing his/her best. Furthermore, fear of failure can lead learners to hold back and do nothing. Similarly, constant failure and the accompanying feelings of incompetence tend to be discouraging and demoralising because the student soon gets convinced that he/she lacks the ability to succeed, therefore it does not make sense to try. The examples given above show that negative emotional self-concept can lead to depression and low achievement. This may lead to no action at all and poor academic achievement. This may lead to anxiety, as will be explained in the next section.

Anxiety

Researchers have identified different types and degrees of anxiety among learners. These are generalised fear for the total school situation, and that of specific aspects of the school such as learners, peers, particular subjects or tests. In the case of school phobia, the learner may refuse to go to school altogether (Dembo, 1994:167). Hackett, Hutton and Levitt (in Dembo, 1994:167) describe how some school subjects like mathematics seem to evoke more anxiety than others. This can be explained by the learner's low self-concept in the subject, fear for the subject, lack of trust in one's ability in the subject and past experience that did not create confidence in the learner. Low grades and avoidance of the subject have been registered as outcomes of anxious feelings.

Wiest, Wong and Kreil (1998:602) report that learners with higher intrinsic motivation, higher school achievement, and favourable perceptions of their competence have lower academic anxiety. Learners with perceived competence earned better grades than did those with less positive views of themselves.

Test anxiety is an example of a specific type of anxiety about academic ability evaluation. Hill and Wigfield (in Dembo, 1994:162) remark that test anxiety was one of the most important aspects of negative motivation with a debilitating effect on school performance. Sadly, it increases through the elementary to high school and beyond, and is strongly and negatively associated with indices of intellectual and academic performance.

Covington (in Dembo, 1994:168) identifies two dimensions of test anxiety namely, *worry* and *emotionality*. Worry was linked to the cognitive aspects of anxiety such as negative beliefs, troubling thoughts, and poor preparation, while emotionality refers to reactions like tension and nervousness. Both have a negative effect on

performance but worry is worse because it persists throughout the test while emotionality declines once the test has commenced.

However, not all anxiety is associated with poor performance. Stipek (in Dembo, 1994:167) has shown that small amounts of anxiety can facilitate learning. A feeling of confidence and preparedness for an examination and a little anxiety can serve as motivation to excel.

Summary of Emotional Self-Concept

The above examples have demonstrated that emotional self-concept plays an important role in academic achievement. The emotional self-concept can either enhance or lower achievement. Anxiety, as an important emotional self-concept variable, has been found to influence achievement negatively if intensity is high, while low-level anxiety can promote achievement through increased motivation. Anxiety can be generalised to the entire school situation or be focused on a specific subject or academic task such as tests. Consequently, when studying emotional self-concept it is important to identify the context, describe and explain its effect on behaviour. In view of the above background, it was the intention of the study to investigate the relationship between emotional self-concept and academic achievement in secondary schools in Zimbabwe and also the possible influence of moderator variables: gender, age, grade/form, school type and location, and type of attendance (boarder or day)

Problem Statement

In view of the above background and literature, the research problem was stated thus: Do moderator variables account for significant differences between emotional self-concepts and academic achievement of learners in *Zimbabwean secondary schools*?

Aims of the Research

In view of the afore-mentioned problem statement, the main aim of the research was to: Investigate the role of gender, school location and type, type of attendance and age variables on learner emotional self-concept and academic achievement in Zimbabwean secondary schools.

Secondary aims were to:

- Examine gender and grade(Form) differences with regard to emotional self-concept and academic achievement;
- Examine the differences between learner emotional self-concept and academic achievement by school location and type, type of attendance and age.

Below are specific research problems/hypotheses that emanated from the review of literature on similar topics to test the relationship between learner emotional 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 emotional 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

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of male and female learners?

H₀₁: There is no significant difference between the academic achievement and the emotional self-concepts of male and female learners.

Research problem 2

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of junior and middle learners?

H₀₂: There is no significant difference between the academic achievement and the emotional self-concepts of junior and senior learners.

Research problem 3

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of urban and rural learners?

H₀₃: There is no significant difference between the academic achievement and the emotional self-concepts of urban and rural learners.

Research problem 4

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of learners of different ages?

H₄: There is no significant difference between the academic achievement and the emotional self-concepts of learners of different ages.

Research problem 5

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of learners in different school types?

H₅: There is no significant difference between the academic achievement and emotional self-concepts of learners in different school types.

Research problem 6

H₀: Is there a significant difference between the academic achievement and emotional self-concepts of boarders and day scholars?

H₆: There is no significant difference between the academic achievement and emotional self-concepts of boarders and day scholars.

SIGNIFICANCE OF THE STUDY

The study has important implications for educators, parents, policy makers, school managers and educational psychologists. The study highlights the role of moderator variables on personality factor, emotional self-concept in learning and academic achievement. It will enhance educators' understanding of how learners experience learning tasks, classroom and school environments and the consequences on academic achievement. It will help school authorities formulate policies that seek to improve learners' engagement in the school leading to better performance. Finally, the study will open more opportunities for research on emotional self-concept and academic achievement in different settings.

In view of the above background, rationale and literature review, the study investigated differences between emotional self-concept and academic achievement of adolescent learners in Zimbabwe secondary schools on the basis of gender, age, grade/form, school location and type, type of attendance to reveal those variables that accounted for significant differences in learners' emotional self-concepts and academic achievement. It was predicted that there were significant differences between emotional self-concept and academic achievement and that variables such as gender, grade/form, age, school location, school type and type of attendance mediated positively in emotional self-concept and academic achievement.

METHODOLOGY

Research design

The aim of the study was to describe and explain differences between emotional self-concepts and academic achievement of adolescents in Zimbabwe secondary schools. The traditional quantitative methodology of measuring the differences using the statistical *t-test* was adopted. The cross-sectional survey research design was used as a means of exploring and evaluating emotional self-concepts and academic achievement of learners in different school types and locations. A *Self-Description Inventory (SDI) Questionnaire* (See Appendix A) adapted from *Marsh's Self-Description Questionnaire (SDQ)* (Marsh, 1990) was used to collect data from individual self-reports of the learners' knowledge, attitudes or behaviours in learning situations. An analysis of variance (ANOVA) was carried out to determine differences between emotional self-concepts and academic achievement on the basis of the following moderator variables: age, gender, grade/form (junior/middle), school location (urban/rural), school type (government/non-government) attended, and type of attendance (day/boarder).

Participants

Participants were 1281 above- and below average secondary school learners (junior: Forms 1 & 2: 52.5% and middle: Forms 3 & 4: 47.5%); (male: 48.9% and female: 51.0%) participated in the study. The average age of the participants was 14.5 years, with the youngest aged 13 years and the oldest 16 years plus. Participants were drawn from ten purposely-selected schools to represent the wide range of secondary schools by type (government: 68.9% & non-government: 31.1%), location (urban: 57.6% & rural: 41.4%), type of attendance (boarding: 24.5%; day: 74.2%). Responses were used to test a number of hypotheses as listed above. School mid-year examination results in compulsory subjects (English, mathematics, an indigenous language (Ndebele or Shona), science and history) were used as measures of academic achievement.

Self-Description Inventory Questionnaire (SDIQ) and Measures

The questionnaire comprised 25 questions divided into two sections (Biographical and emotional self-concept scale). Questions appear on Appendix A. Responses were recorded on the response sheet, Appendix B. The first section of six questions (1-6) focused on *biographical data* namely, gender, form/grade, age, school location, school type and type of attendance.

The second section comprised 25 questions on *emotional self-concept* with a reliability coefficient of 0.80. Questions required respondents to rate themselves on emotional anxiety, depression and happiness (e.g. "*I become anxious towards exam time*", "*Low marks generally depress me.*")

Responses to questions were on a five point Likert rating scale ranging from *Definitely Disagree* (1), *Disagree* (2), *Uncertain* (3), *Agree* (4) and *Definitely Agree* (5).

Content and face validity

Content and face validity were addressed using the judgement of an established researcher knowledgeable on the whole issue of emotional 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 emotional self-concept domain. Coefficient was within the acceptable range of 0.65 to 0.90 for personality attributes such as emotional *self-concept*. (McMillan & Schumacher, 1993: 230).

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 (Appendix A) and the other, the answer sheet (Appendix B). 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, Appendix B. Participants were asked to respond to emotional self-concept questions expressing how they felt about themselves 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.

RESULTS AND DISCUSSION

Results of the Quantitative Research: The Questionnaire

The biographical data of respondents

A total of 1281 junior (Form 1 & 2) and (Form 3 & 4) secondary school male and female learners participated in the study. Details of the sample are given in table 1.

Table 1 Biographical data of adolescents

Group	Frequency	Percentage
Gender		
Male	627	48.9
Female	653	51.0
Missing	1	1
Total	1281	100
Form/Grade		
Junior (Forms 1&2)	673	52.5
Middle (Forms 3&4)	608	47.5
Total	1281	100.0
Location of School		
Urban	738	57.6
Rural	530	41.4
Missing	13	1.0
Total	1281	100.0
Age		
13 years	159	12.4
14 years	332	25.9
15 years	313	24.4
16 years	298	23.3
over 16 years	179	14.0
Total	1281	100.0
School Type		
Government A	302	23.6
Government B	258	20.1
Government C	321	25.1
Non-Government	399	31.1
Missing	1	.1
Total	1281	100.0
Type of Attendance		
Boarder	314	24.5
Day Scholar	951	74.2
Missing	16	1.2
Total	1281	100.0

The average age was about 14.5 years with the youngest being 13 years and the oldest 16 years plus. Participants were drawn from ten purposely selected schools to represent the wide range of secondary schools by type (government & non-government), location (urban/rural), and type of attendance (boarding/day) and level of performance in public examinations (high/low). Of these six were from Greater Harare urban and four from Mashonaland East Region which is predominantly rural. There were five Government and five Non-government schools. Of the Government schools, 'A' schools were situated in low density suburbs, 'B' in high density suburbs and 'C' in rural areas. Two of the Government urban schools offered boarding and day school places while one was entirely day. Both rural Government schools were day schools only.

Three of the Non-government schools were situated in the urban areas and the other two were boarding schools in rural areas. Boarding schools recruited learners from all over the country unlike day schools which enrolled learners from the surrounding areas only. Among the participating schools were those at the top of the school league tables on the national 'O' level examination results. From each school high and low performers participated according to the information supplied by the schools. Both juniors and seniors were included in the sample. The sample was deemed to be representative of the Zimbabwe school population. Responses were used to answer research questions/problems and to test hypotheses 1 to 6 of the current study presented in the sections that follow.

Research problem 1

H_0 : Is there a significant difference between the academic achievement and the emotional self-concepts of males and females?

H_{01} There is no significant difference between the emotional self-concepts and academic achievement of male and female learners.

A two-tailed *t*-test for unrelated groups was administered to determine the equality of average achievement means for male and female learners. The results are shown in table 1.

Table 2 Significance of differences of average academic achievements and emotional self-concepts of males (N=627) and females (N=653)

Factors	N	Mean	t-value	Df	Significance
Achievement:					
Male	627	56.43	.096	1278	p>0.05
Female	653	56.34			
Emotional self-concept:					
Male	627	3.2539	1.276	1278	p>0.05
Female	653	3.2247			

According to the results in table 2, there was no significant difference between the average academic achievement and the emotional self-concepts of male and female learners participating in this study. The mean marks for males (56,43) and females (56,34) confirmed the result as well. The same trend applied to the mean scores for emotional self-concepts of male and female learners. Consequently, the null-hypothesis was rejected on the 5%-level of significance. The emotional self-concepts of male learners were marginally higher and better than those of the female learners (female: 3.2247, male: 3.2539) although their achievements were similar. Results demonstrated that any differences in emotional self-concepts and academic achievement could not be explained by gender. However, from qualitative evidence both male and female participants reported that they experienced feelings of joy, excitement and satisfaction when they passed and embarrassment and depression when they failed. Depression and anxiety were reported as affecting academic achievement negatively. These results supported findings by Dembo (1994) and Brogan (1998), who reported that depression and high levels of anxiety interfered with learning and academic achievement. This was overall performance and not by subject. Probably an examination of emotional self-concepts and academic achievement in different subjects may be more revealing than overall performance. This could be the focus of another investigation.

Research problem 2

H_0 : Is there a significant difference between the academic achievement and the emotional self-concepts of junior and middle learners?

H_{02} There is no significant difference between the academic achievement and the emotional self-concepts of junior and middle learners.

A two-tailed test was administered to test the hypothesis. Table 3 illustrates the results.

Table 3 Significance of differences between average achievements and emotional self-concepts of junior (N=673) and middle (N=608) learners

Factors	N	Mean	t-value	Df	Significance
Achievement:					
Junior	673	57.18	1.694	1279	p>0.05
Middle	608	55.48			
Emotional self-concept:					
Junior	673	3.2899	4.692	1279	p<0.01
Middle	608	3.1831			

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

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

The results in table 3 show that there were significant differences between the average emotional self-concepts of junior and middle learners but not academic achievement. The null-hypotheses was rejected on the 1%-level of significance for the emotional self-concept but could not be rejected for the academic achievement. Table 3 indicates that junior learners had higher mean scores for emotional self-concept and lower mean academic achievement score. Results imply that the grade/form was in could explain differences in emotional self-concepts but not academic achievement. Consequently, educators and parents must pay attention to behaviours that may affect learners' emotions since these may have an impact on their academic achievement.

Research problem 3

H_0 : Is there a significant difference between the academic achievement and the different self-concepts of urban and rural learners?

H_3 : There is no significant difference between the academic achievement and the different self-concepts of urban and rural learners.

A two-tailed t-test was used to analyze the responses from urban and rural learners. The results appear in table 4.

Table 4 Significance of differences between average academic achievements and emotional self-concepts of urban (N=738) and rural (N=530) learners

Factors	N	Mean	t-value	Df	Significance
Achievement:					
Urban	738	56.40	-.106	1266	p>0.05
Rural	530	56.51			
Emotional self-concept:					
Urban	738	3.2729	3.526	1266	p<0.01
Rural	530	3.1908			

According to the emotional self-concepts of urban and rural learners differed significantly in their emotional self-concepts but not academic achievement. The null-hypothesis was therefore rejected at the 1%-level of significance for the emotional self-concept. The null-hypothesis on the academic achievement could not be rejected. Urban learners appeared to have better emotional self-concepts than rural learners. Their average test scores were similar. The results showed that school location mattered in terms of developing learners' emotional self-concepts. Though differences in academic achievement did not reach statistically significant level, the inclusion of high performing boarding schools in both rural and urban areas in the sample may have distorted the final outcome. Future studies may need to focus on rural schools excluding boarding schools.

Research problem 4

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of learners of different ages?

H₄: There is no significant difference between the academic achievement and emotional self-concepts of learners of different ages.

An analysis of variance (ANOVA) demonstrated a significant difference between the average achievements of learners of different ages. Table 5 illustrates the results.

Table 5 Significance of differences between average achievements and emotional self-concepts of learners of different ages

Factors	N	Mean	t-value	Df	Significance
Achievement: 13	159	59.60	3.074	4	p<0.05
14	332	57.87			
15	313	55.16			
16	298	55.60			
16+	179	54.13			
Emotional self-concept: 13	159	3.3214	5.356	4	p<0.01
14	332	3.2911			
15	313	3.2210			
16	298	3.1715			
16+	179	3.2145			

Table 5 shows significant differences in the emotional self-concepts and academic achievements of learners of different ages. The null-hypothesis was rejected on the 1% and 5%-levels of significance for emotional self-concept and academic achievement respectively.

Bonferroni *post hoc* tests were carried out to determine exactly where the significant differences were. The tests revealed that differences were between the:

- Emotional self-concepts of 13 and 16 year olds (p<0.01);
- Emotional self-concepts of 14 and 16 year olds (p<0.01);

According to the mean scores:

- 13 and 14 year olds had significantly better emotional self-concepts and academic achievements than 16 year old learners;

The results showed that age was a significant factor that accounted for differences in both academic performance and emotional self-concepts which educators and parents needed to pay attention to in their daily interactions in learning situations and at home. The results supported earlier research on the relationship between self-concept and age and that feelings of academic competence had a positive effect on emotional self-concept and academic achievement. (Nicolls in Dembo (1994) reported an increase in emotional self-concepts with age in a study of adolescents in Nigeria. Results however, contradicted Ezeilo (in Mboya, 1999 & Huitt, (1998) who reported a decline in emotional self-concept as learners grew older.

Research problem 5

H_0 : Is there a significant difference between the academic achievement and the emotional self-concepts of learners of different school types?

H_5 : There is no significant difference between the academic achievement and the emotional self-concepts of learners of different school types.

Analysis of variance revealed significant differences. The results appear in table 6.

Table 6 Significance of Differences between Average Achievements and Emotional Self-Concepts of Learners of Different School Types

Factors	N	Mean	t-value	Df	Significance
Academic Achievement:					
Government A	302	52.15	31.814	3	p<0.01
Government B	258	54.90			
Government C	321	52.89			
Non-government	399	63.24			
Emotional self-concept:					
Government A	302	3.2449	12.611	3	p<0.01
Government B	258	3.3478			
Government C	321	3.2551			
Non-government	399	3.1517			

The results in table 6 demonstrate significant differences between the academic achievement and emotional self-concepts of learners in different school types.

Post hoc Bonferroni tests revealed the following instances of significant differences:

- The emotional self-concepts of Government A with Government B learners (p<0.05)
- The emotional self-concept of Government B with Government A and C learners (p<0.05; p<0.01)
- The emotional self-concept of Government C with Government B and Non-government learners (p<0.05; p<0.01)
- The emotional self-concept of Non-government with Government A, B and Government C learners (p<0.05; p<0.01; p<0.05)

According to table 6, learners in Government B schools had the highest means for emotional self-concept and second highest academic achievement mean. Learners in Government C schools had the least means for academic achievement. Learners in Non-government schools had the highest academic achievement mean but least for emotional self-concepts. Results helped to emphasize the fact that the school ones goes to played an important role in learners' academic achievement and development of emotional self-concepts. Consequently, the practice by some

parents of transferring their children from one school to a 'better' one is wise and beneficial, and should be encouraged. Learners in B schools lived with parents and attended mixed ability schools and generally less competitive hence healthier emotional self-concepts. On the other hand, learners in Non-government schools, some of them selective and lived away from parents, hence high competition and anxiety to achieve may have lowered their emotional self-concepts. Their performance was higher because they were naturally higher performers in highly supportive and competitive school environments but may not have enjoyed their learning experience as demonstrated by lower mean emotional self-concepts scores. Literature has indicated that positive emotions promoted effort and better performance (Nakamura and Seligman in Fontana, 1997:34). Results of the current study supported earlier research by Dembo (1994; Dambudzo (2013).

Research problem 6

H₀: Is there a significant difference between the academic achievement and the emotional self-concepts of boarders and day scholars?

H₆: There is no significant difference between the academic achievement and the emotional self-concepts of boarders and day scholars.

Table 7 Significance of differences between average achievements and emotional self-concepts of boarders (N=314) and day (N=951) scholars

Factors	N	Mean	t-value	Df	Significance
Achievement:					
Boarder	314	65.01	10.102	1263	p<0.01
Day Scholar	951	53.70			
Emotional self-concept:					
Boarder	314	3.1280	-5.642	1263	p<0.01
Day Scholar	951	3.2768	-5.173		

Table 7 shows that there were significant differences in the academic achievement and emotional self-concepts of boarders and day scholars ($p < 0.01$). The null-hypothesis was rejected at the 1%-level of significance. Boarders achieved significantly better test mean scores than day scholars while day scholars had significantly better mean emotional self-concepts score (day= 3.2768, boarder= 3.1280). This was to be expected since the boarding schools enrolled the brightest learners in the country while day schools had an obligation to enroll anyone who wanted a school place. However, the lower mean emotional self-concepts were rather difficult to account for. Probably higher expectations to achieve and staying away from parents might have been responsible for higher levels of anxiety among boarders. Generally, there were distinct differences between boarders and day scholars.

CONCLUSION

The study investigated the presence of significant differences in emotional self-concepts and academic achievement among learners in Zimbabwe secondary schools. Results have demonstrated that age, school type and type of attendance accounted for significant differences, grade/form accounted for significant differences for junior learners only while school location affected emotional self-concept only. Gender accounted for no statistically significant differences in both academic achievement and emotional self-concepts of adolescent learners. However, qualitative data showed gender differences in subject choice as well as performance, with males preferring and performing better in sciences and maths, and girls in humanities subjects particularly languages. Age and school location influence was inconsistent suggesting further investigation to establish their role. Therefore, choice of school type and type of attendance for children were important considerations by parents and educators. Further research is needed with a bigger sample and in individual subjects isolating boarding from true rural schools.

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