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Variables Affecting Learners' Performance at Ordinary Level in Zimbabwean Secondary Schools

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Abstract: The study sought to assess variables affecting learners' performance at Ordinary Level in Zimbabwean Secondary Schools. The researcher employed the mixed methods research methodology and adopted pragmatism as its philosophy in guiding the research study. The research design adopted in the study was the triangulation design. The sample comprised of 216 respondents and 5 participants inclusive who were randomly and purposively selected. The study's main data collection and generation instruments were the questionnaire and the interview. Thematic data analysis were used to present and analyse data. For statistical methods, electronic data capture was performed using STATA software package. Graphs and tables were used to present results. Continuous data were presented using mean and standard deviation (SD). Chi-square test of association and Learner t-test were used to determine associations between categorical variables and perspectives that learners' performance was good. The findings were that learners from child-headed families lacked parental involvement in their learning leading to low academic achievement. The major conclusions were that all variables assessed in the research study depending on circumstances were found to affect learners' academic performance in Zimbabwean secondary schools. Further, learners' academic achievement was marred by inadequate teaching and learning resources. It was recommended that there was need to avoid negative effects of different variables. The research study recommends that schools should ensure to avail adequate resources. Schools could make use of various avenues as well as networking with Non-Governmental Organisations in order to acquire resources for learning.

Keywords: SATA, Secondary School, Government, Non-Government Organization, Learners.

INTRODUCTION

The topic of the research study is "Variables affecting learners' performance at Ordinary Level in Zimbabwean secondary schools". The idea is to identify inputs which have consistently positive effects, negative effects and inputs which seem not to affect achievement at all.

The paper is organised in sections. The first section is on background to the study, statement of the problem, research hypotheses and research questions including related literature, the second section is on methods and procedures, the third section is on findings and discussions and the last section is on conclusions and recommendations.

BACKGROUND TO THE STUDY

Education remains the biggest instrument for academic progress, social mobilisation, political survival and effective national development of any country and it constitutes the largest industry in many countries the world over including Zimbabwe. Bowles, Gintis and Osborne (2018) state that education occupies an important position in every major economy of the world. In the United States of America, over 6% of the gross national budget is yearly spent on formal education alone. The United Nations Development Programme (UNDP) for 2012 indicates that public spending on education was 3.6% of Gross Domestic Product (GDP) in East Asia (UNDP, 2013)' Kenya spent over 6.57% of GDP on education over the financial year period 2011/12. In Zimbabwe, nearly 23% of the national budget goes to education each fiscal year (The Herald, July 25 1991).

One of the indicators of quality education being provided is the cognitive achievement of learners (United National Education, Scientific and Cultural Organization (UNESCO, 2005); Kimani *et al.* (2013) say the academic achievement is designated by test and examination scores or marks assigned by the subject teachers. According to UNESCO (2005:35), "education is the springboard for economic and social development in Africa".

Governments continue to invest heavily in school facilities, instructional materials, and teaching personnel. Bowles (2017) points out that most forms of schooling are a direct input into yet higher levels of education. The evaluation of school output should not be confined to the direct effects of schooling on the productivity of the worker but should also include the inculcation of good citizenship skills. There is evidence that success in vocational training as well as in higher education may be significantly related to the initial level of academic performance.

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The World Bank (2018) suggests that education provides a fertile ground without which other development initiatives would not take root. As indicated in the World Bank (2018), experience from Africa and elsewhere provide strong evidence that increased efficiency in education and training could yield broad economic and social benefit. Investment in the provision of family planning services is more effective if women using the service are better educated. One of the economic functions performed by education is socialisation. According to Zvobgo (1996), education in Zimbabwe is viewed as an effective vehicle for promoting the social goals of the country including the development of non-racists attitudes, a new national identity and loyalty to the state. Improving the distribution of education would then result in reducing income disparities. If many people are educated and subsequently become employed, the income tax base would be broadened. In economics, education is regarded as an investment good which yields future returns in the form of increased income.

The Zimbabwean Government has invested a lot of money in educational expansion. In 1988 the total expenditure on education was $859 021.00 according to the annual report of the Secretary of Education and Culture (1988). With a lot having been achieved in terms of quantitative expansion, it does not appear that the same would be said for the quality of education. Studies by Nkoma & Mapfumo (2013); Garira (2015) express concern about the quality of education, particularly the low levels of academic achievement.

In recent times, in the Americas, a decline in learners' performance was noted. Some blamed school administrators (Heads or Principals) and the teachers while others blamed the calibre of learners themselves and their parents. Supervision provides opportunities for the teacher to be groomed through a critical study of instructional process and classroom interactions to carry out their teaching tasks in line with professional codes of conduct (Fraser, 2012).

In Chile, for example, teachers are rewarded collectively when they work in schools which are identified as high performing in the National Performance Evaluation System of Subsidised Schools (UN Information, 2009). School Heads, teachers and parents are primarily responsible for learners' academic performance (Darling-Hammond, 2000). Schools are evaluated using learners' achievement data (Heck, 2009).

In Australia, talking about the 2013 GCSE record fall in learners getting low grades, Pring *et al.*, (2012) argue that many factors are underlying these results, including a sizeable increase in entry by 15-year olds, new science specifications designed with greater challenge, early and multiple entries in Mathematics as well as increased numbers of foreign learners without an English background. Writing about Australia, Coleman & Fraser (2011) postulate that performance of learners in public examinations has been declining for the past five years due to many reasons, chief among them being lack of parental involvement in their children's learning, especially those at secondary schools.

In Zimbabwe, the enormity and critical nature of educational challenges are evident in the increasing low performance in Ordinary Level examinations and the sporting activities as well as bad behaviour by learners. Nyagura & Reece (2003) express concern about the quality of education, particularly the low levels of academic achievement. According to Tsime (2019), the Ordinary Level results consistently record a pass rate of between 18.4% to a high of 22% during the five years. Statistics from Chitungwiza District reveal that many schools performed even below the national average pass rate, that is, between 10.27% to a high of 14.02% (District schools' inspector, 2018). Specifically, the learners' pass rates have been generally low as reflected in Tables 2.1, raising concerns from educational stakeholders.

Table 1: Percentage pass rate of low performing secondary schools in Chitungwiza District: Oct/ Nov 2013-2017 Results.

	2013	**2014**	**2015**	**2016**	**2017**	**AVERAGE**
School A	25.40%	12.32%	7.29%	13.48%	11.63%	14.02%
School B	9.60%	5.60%	11.92%	14.63%	14.47%	11.24%
School C	15.91%	9.77%	9.56%	11.62	8.66%	11.10%
School D	8.20%	12.54%	12.12%	10.89%	7.60%	10.27%

Source: District Schools Inspector 2017, Ministry of Primary and Secondary Education, Chitungwiza District: Harare Province.

The measurement of learners' academic performance continue to be a controversial topic among policymakers, measurement experts and educators (Elliot, 2005; Johnson, 2006). Noting with great concern and against the above background, the researcher was motivated to conduct the study in question.

Most studies (Bowles, 2017; Achoka, 2007; Odongo, 2016; Boit *et al.*, 2012; Onsomu *et al.*, 2006) are conducted outside Zimbabwe. They appear to lack context specificity. Also except for Bowles (2017), they are more than five years old. This implies that they may not be able to stand against the test of time. Firstly, the researcher began the review of related literature by

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giving Fuller's (2017) Pre-school, In-school and Leaving-school conceptual framework. According to Miles & Huberman (1994), a conceptual framework is a visual or written product, one that "explains, either graphically or in narrative form, the main things to be studied-the key factors, concepts, or variables-and the presumed relationships among them." Table 2.2 tries to conceptualize how the factors, concepts or variables influence the learners' performance at Ordinary Level. The conceptual theory sees the organisations as open systems which receive resources (inputs) and transform them into products and services (outputs) using internal, social and technological processes (throughputs).

Table 2: Factors that influence learners' academic achievement

CHILD FLOW: TIME 1 **PRE-SCHOOL**	**TIME 2** **IN-SCHOOL**	**TIME 3** **LEAVING SCHOOL**
1. Pre-school development -Health and Nutrition -Cognitive growth -Parents' literacy and → endorsement of schooling	2. SCHOOL QUALITY -Material inputs → -Teacher quality -Teacher practice and classroom organisation -School management and structure 3.SOCIAL/ECONOMIC CONTEXT → -The demand for child's labour -Opportunity costs of attending school	4. SCHOOL OUTCOMES -Literacy level and academic Achievement - Social skills

Source: Fuller (2017).

The school as a social system receives inputs (learners, teachers, funds, technology, laws, school board policies, community values), transforms them into an educational programme and produces graduates (outputs) with certain social norms and skills. Simkins cited in Adeyemi (2008) expresses that the components of the education system can be represented in the input – process – output model. He goes on arguing that the education system is a productive system that has inputs. The outputs are generally defined as terms of learners' test scores which denote academic achievement (Worthington, 2001).

According to Wobmann & Schutz (2004), learner achievement is produced by several inputs in the education process. Such inputs include class size, availability of teaching and learning materials and teacher characteristics. The teacher as an input is the principal factor in education provision and that affects the quality of education in a significant way. The personal characteristics of the individual teacher include academic qualifications, pedagogical training, content training, aptitude and years of service/experience. A teacher brings these characteristics to class to facilitate the learning process. The extent to which other inputs can improve the quality of education is directly related to the extent to which teachers effectively use the inputs to improve the teaching and learning process. Open systems export their products to the external environment and those outputs usually become inputs of other organizations. After acquiring the necessary skills, attitudes and knowledge, our secondary school graduates are supposed to join institutions of higher learning, tertiary education or employment.

The production function model highlights the four main components as the inputs, processes, outputs and outcomes. Inputs have been reviewed as the resources, for example, learners, teachers, facilities and finance. They are transformed into outputs during processing in the second group of variables. Outputs are direct and immediate effects of the educational process whereas outcomes refer to the long – term effects of the educational outputs which are realised in the interaction of the educational output with the social environment.

Secondly, the researcher was guided by the theoretical framework of (Ellis, 2009) which is Constructivism. Constructivism, according to Ellis (2009), is a theory of learning founded on the principle that people construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. Constructivist learning theory originates from the work of cognitive theorists which are based on the belief that learning occurs as learners are actively involved in a process of meaningful construction of knowledge as opposed to passively receiving knowledge. Through interaction with the physical situations, or concrete objects, a child's physical experience accumulates and he/she is able to conceptualize, think creatively and logically. According to the theory in question, learners are the makers of knowledge and meaning. The proponents of constructivism state that knowledge is constructed by people and does not exist on human mind. This then reveals that learners are not passive receivers of transferred knowledge. This means that learners construct knowledge as they cognitively create meaning of their own environment. Therefore the school environment should be educational to learners. There

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should be material resources in schools, there should be adequate infrastructural resources such as classrooms, libraries with relevant books, just to mention a few and knowledgeable human resources, for example, teachers and the non-teaching staff like librarians in order for learning to become fruitful resulting to excellent learner-performances.

Another constructivist theorist is Bruner (1966) who advances that learning is an active process in which learner's constructed new ideas or concepts based upon their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and make decisions, relying on a cognitive structure to do so. Cognitive structure (schema, mental models) provides meaning and organisation to experiences and allows the individual to "go beyond the information given". As far as instruction is concerned, the instructor should try and encourage learners to discover principles by themselves. The instructor and the learner should engage in an active dialogue (like Socratic learning). The task of the instructor is to translate information to be learned into a format appropriate to the learner's current state of understanding. Curriculum should be organised in a spiral manner so that the learners continually build upon what they would have already learned.

Thirdly, a thematic approach was used in the literature using the theme derived from the research question. Fourthly, empirical studies on variables from pre-school environment, pre-'O' Level context, socio-economic context and school quality hampering learners' academic performance in technologically developed countries (TDCs), in less technologically developed countries (LTDCs) and studies so far done in Zimbabwe were bunched and examined to a reasonable depth.

Related literature comes up with the following variables which could be briefly examined since we could also likely come across them in the findings and discussion.

Malnutrition and poor living conditions affect the child's health and directly or indirectly on his/her ability to socialise (Fuller, 2017; Gordon & Levitas, 2006). The results of many studies (Pantazis *et al.*, 2006; Manikam, 2002) reveal that the quality of verbal interaction between child and adults may promote higher intellectual development and academic achievement later in the child's life. The same is also claimed by Douglas (2015). Pre-natal damage may result from inadequate pre-natal care (Pantazis; Gordon; & Levitas 2006). This may, therefore, affects the child's future school performance. According to Ikpa & McGuire (2009), kindergarten attendance seems to have a lasting impact on both verbal and mathematics achievement and reading skills.

Parents' education seem related to the academic achievement of learners (Douglas, 2015; Broh, 2002; Fuller, 2017). Douglas (2015) suggests that mothers make an equal contribution with the fathers to inherited ability and possibility a greater one to attitudes to learning. There is evidence that the extreme poverty of the environment leads to a progressive deterioration in academic ability (Musgrove, 2012). Fraser (2012) working in Aberdeen also find poverty to have an appreciable effect even when intelligence level has been taken into account.

Among both black and white children in the United States, academic achievement declines as the number of children in the family or the number of people in the household increases even when other family characteristics remain the same (Broh, 2002). Douglas (2015) argues that family size may affect the learners' attitude and thus indirectly influence achievement.

Owen (2014) points out that the effectiveness of schools in terms of learner learning and development is significantly influenced by the quality and characteristics of the organisational climate. The main elements of school quality include school climate, school inputs and management. Cohen and Manion (2011) identify specific features of the social organisation of school life which create favourable conditions for teaching and learning. The factors are leadership qualities and material inputs.

The attitude and expectation of learners are greatly influenced by their teachers (Simon & Osborne, 2010). Consequently, very few learners would join school unless they receive considerable encouragement and a model to do so from their teachers (Panigrahi, 2012).

Some researchers argue that effective leadership is necessary for initiating and maintaining the improvement process in schools (Mendez-Morse, 1992; Leithwood & Jantzi, 1990; Mertz, 2010). The school Head is uniquely positioned to fill that role and certainly his/her support for school improvement is essential. Poor leadership is usually accompanied by declining standards in academic achievements, poor school facilities and low morale of both learners and teachers (Owen, 2014). Magati, Bosire, and Ogeta (2012) have found out in Kenya that poor school management style influences the academic performance of learners. This is in agreement with Abagi (2001) that a good management style is a key factor that influences learners' academic performance.

Syllabus coverage determines learner performances in the examination because learners could be tested generally from any topic in the syllabus and if any school did not cover all the topics in the syllabus, then it would be disadvantaged. Jaeger (2003) observes

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that effective and efficient management of curriculum and instruction in educational institutions are the basic prerequisite for stability and improvement of academic performance.

The adequate supply of material inputs alone does not ensure that the management and social elements of school quality would improve (Hanushek, 2003). The school inputs include expenditure per learner, class size, library and supplies, physical plan and teacher turnover. Fehrmann *et al.* (1987) say that expenditure per learner has a positive effect on a learner's achievement. However, the effect is indirect. Bidwell & Kasarda (1975) show that the level of district resources has a positive impact on the ratio of teachers to learners, which in turn has a positive impact on reading and mathematics achievement.

Ekundayo (2012) supports the notion that learning experiences are beneficial when there are adequate quantity and quality of infrastructural resources. The same researcher states that unattractive school buildings, crowded classrooms, non-availability of playing ground and surroundings that have no aesthetic beauty could contribute to low academic performance.

Bowles (2017) suggests that the physical facilities of the school such as science laboratories and libraries appear to be significantly related to achievement. In viewing literature on the availability of textbooks, supplementary readers, equipment and funds, Coleman (2013) concludes that learners' academic achievement is related to quantity instructional facilities in the school. According to Okongo,Ngao, Rop & Wesonga (2015), the availability and adequacy of teaching and learning resources determine the educational system's efficiency. Therefore, the insufficiency of or the absence of teaching and learning materials make teachers teach in an abstract manner resulting in poor lesson delivery and eventually leads to low academic performance.

In Pakistan, Young (1999) holds the view that learner performances are linked with the size of the library. The use of the library positively affects the learner performance. On the contrary, Fuller (2017) argues that laboratories are not related to higher learner performance. Karemera, Reuben & Sillah (2003) have found that learners' performance is significantly correlated with the academic environment and the facilities of library and computer laboratory in the institution in Pakistan.

Teacher turnover is negatively related to academic achievement (Broh, 2002). This is a predictable result since it takes time for a teacher to get used to a new situation and time for learners to get used to a new teacher. During the period of mutual adjustment, learners would tend to learn less than at other times.

Coleman (2013) concludes that differences in learners' achievement are related to teacher quality. Bowles (2017) points out that the teacher is the most important school input. The main elements of teacher quality include teacher's academic education, type of education, recency of education, certification of teacher's experience, teacher's time allocation, teacher's verbal achievement and personal characteristics of the teacher (sex, race, and marital status). The educational attainment of teachers seems to have a positive effect on reading and verbal achievement and for Mathematics at the elementary school level; there appear to be a negative relationship between teacher's educational attainment and learner achievement (Bidwell & Kasarda, 2007).

Bowles (2017) claims that the teacher's teaching experience is positively related to the learner's achievement. Teachers' behaviour within their classrooms including efficient use of instructional time, the extent which teachers evaluate learners' performance and teachers' ability to place learners in learning roles have been shown to have an impact on learners' academic achievement. The teacher should take individual differences in learners' performance and treat them differently following his/her differential expectations (Cohen & Manion, 2001).

The attitudes of parents and community regarding academic achievement in education experienced early in the child's life influence later school attainment (Ebhohimen, 2017).

Poor parents may require that their children contribute to the household 's income (Keller & McDade, 2000). It may be that more affluent families do not require that children contribute to the household's income. This helps the child to have considerable time for school attendance. Solmon (1985) has studied the influence of school resources in Chile and has concluded that investments in school quality are likely to have a substantial and positive impact both upon learners' success in school and upon their status in the labour market. According to Orodho (2002), parents' financial standing is behind the poor academic performance of learners in Kenyan secondary schools.

According to Slavin (1993), an additional learner in class is sometimes found to have a positive effect, sometimes a negative effect and sometimes no effect at all on the average achievement of learners. (Fuller, 2017) says there is a highly significant relationship between learners – per – teacher and achievement. However, class size is purportedly not a significant influence on achievement (Hanushek, 2004; Birdsall, 1982; Haddad (2006) suggests that an increase in class size does not necessarily lead to a decrease in the level of academic achievement of learners.

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Likewise, a decrease in class size does not guarantee an improvement in the social environment of learning. What seems to be important is what the teacher does with the opportunities provided by the size of the class.

In Kenya, Kimani, Kara & Njagi (2013) conclude that weekly teaching workload has a significant effect on academic achievement.

According to Umameh (2011), most mathematics teachers do not make the teaching of mathematics practical and exciting and this lead to negative attitudes to Mathematics by learners. As a result, poor performance in Mathematics is witnessed.

The attitude is an important aspect of learning and it can either hinder or enhance the learning. Therefore, a learner who is highly motivated to learn and sees its usefulness can make better progress than one who has a lower degree of aspirations, interest and motivation. Mills (2009) states that if one is motivated to learn, he/she appreciates its value and chances to perform in it are high. Pettigrove (2007) defines ambition as the persistent and generalised striving for success, attainment and accomplishment. Certainly, academic ambition could influence learners' learning, preparation of life choices, academic motivation and achievement.

However, the relationship between educational outcomes and academic ambitions seem to be a complex one. Ambition can both be a predictor of educational achievement and an outcome of it and may be influenced by self-efficacy, personal traits and experiences (Gutman & Akerman, 2008).

The academic achievement of learners depends on many basic factors of which effort is paramount (Tella & Tella, 2003). Effort refers to the overall amount of energy expended in the process of studying (Zimmerman & Risemberg, 1997) whereas persistence, also known as effort management or effort regulation (Pintrich, 2000) means the continuous investment of energy in learning even when obstacles are encountered. Carbonaro (2005) defines school effort as the amount of time and energy that learners expend in meeting the formal academic requirements established by their teachers and / or school. He identifies three different types of school effort, thus rule-oriented effort (showing up in and behaving in class), procedural effort (meeting specific class demands such as completing assignments on time) and intellectual effort (critically thinking about and understanding the curriculum).

There was wide research on pre-school environment, socio-economic and school quality variables but it seemed as if there is limited research on the impact of pre-'O' Level variables on learners' academic achievement. There seemed to be little research on the influence of technology on learners' academic performance. The outstanding reason was to find out variables that affect learners' academic performance at 'O' Level in Zimbabwean schools.

Statement of the problem

Secondary school education is expected to enhance economic growth of individuals and society. The Government and parents heavily invest in education. However, the learners' performance at Ordinary Level examinations as evidenced in Table 1.1 is disappointing. High failure rate may lead to a short supply of professionals (in business and agriculture). Failure rate below 40% becomes a pressing issue and therefore, this research study sought to assess variables that affect learners' performance at Ordinary Level in Zimbabwean secondary schools.

Research hypotheses

Due to mixed methods methodology used, it was necessary to make use of hypotheses which were tested at 0.05 level of significance in order to achieve the above purpose.

- There is significant relationship between teachers' demographic characteristics and academic achievement in Chitungwiza District secondary schools.
- There is no significant relationship between teachers' demographic characteristics and academic achievement in Chitungwiza District secondary schools.
- There is a relationship between parents and learners' academic performance.
- There is a negative relationship between parents and learners' academic performance.
- There is significant influence between learners' ambition and academic achievement in Chitungwiza District secondary schools.
- There is no significant influence between learners' ambition and academic achievement in Chitungwiza District secondary schools.

Research question

The study was guided by the following research question:

Which variables hamper learners' performance at Ordinary Level in Zimbabwean secondary schools?

The question would be answered under pre-school environment, pre-'O' Level context, socio-economic context and school quality variables.

METHODS AND PROCEDURES

The researcher used mixed methods methodology which entails the pragmatism philosophy. Mixed methods methodology is unavoidable if one wishes to discover what works. In this sense, pragmatism rejects a position between the two opposing viewpoints (Denscombe, 2008). The use of the paradigm in the study gives room for the data to be

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probed, allowing corroboration and triangulation to be practised, richer data to be gathered and new modes of thinking to merge where paradoxes between two individual data sources are found (Onwuegbuzie & Johnson, 2006).

The approach addresses what the research question focuses on both numerical and qualitative data. Both quantitative and qualitative approaches are run simultaneously but independently in addressing research questions (Cohen, Manion & Morrison, 2013). Hence, the use of mixed methods methodology approach in the study, employed inductive (qualitative) reasoning to identify patterns/themes; and deductive reasoning (quantitative) to test theory and hypotheses. It is an approach that is driven by the pragmatism that yields real answers to real questions which are useful in the real world that avoids mistaken allegiance to either quantitative or qualitative approaches on their own (Creswell, 2014). The use of mixed methods methodology in the study enables triangulation which seeks convergence, corroboration, correspondence of results from different methods.

The perception towards the pre-school environment, pre- 'O' Level, socio-economic and school quality index scores for each study respondent were calculated as the average of the responses from the indicators evaluated in the respective component expressed as a percentage. Graphs and tables were used to present results. Categorical data were summarized using frequencies and percentage distribution. Continuous data were presented using mean and standard deviation (SD). Chi-square test of association was used to determine association between categorical variables and perspective that leaners performance was good. Learner t-test was used to determine association between continuous variables and perspective that leaners performance was good. All statistical tests were concluded at 5% level of statistical significance. All the data analysis was performed using STATA software package.

The research study's population consisted of all secondary school Heads, deputy Heads, senior Masters/Women, Heads of Subject Departments (HODs), teachers, learners, parents, employers, schools' inspectors, and district schools' inspectors in Harare Metropolitan Province.

To address the hypotheses and research question, the researcher decided to carry out the research study in Chitungwiza District only. The District in question was chosen because it had most of the schools being day institutions and records over the years reflected low achievement of the learners, especially in national examinations. A sample of 216 respondents and 5 participants inclusive was enough to draw inferences with some confidence that the sample reflected the characteristics of the entire population.

The sampling techniques used reflected the existence of the mixed methods methodology within the study. Expert sampling was used by the researcher in order to glean knowledge from individuals that had the knowledge, experience and expertise in the field being studied (Cohen & Manion, 2011). The experts were district schools' inspector, school Heads, deputy Heads, senior Masters/Women, HODs and teachers. It is a non-probability sampling method and occurs when elements selected for the sample are chosen by the judgment of the researcher.

In the study, random sampling, a probability sampling was used so that each person in the sample schools had an equal chance of being selected (Leedy & Ormrod, 2005). The aim of using stratified random sampling was to reduce bias in the selection of cases to be included in the sample. The use of stratified random sampling allowed the researcher to make statistical conclusions from the data collected to be valid.

The instruments used by the researcher to gather or collect data were observation, interviews, questionnaires, and document analysis. The instruments were used to achieve both data and method triangulation. Triangulation involves the use of more than one research instrument in a study. More than one research instrument is used to ensure validity and reliability (Hakim, 2004) Data gathered were analysed using thematic analysis. For statistical methods, electronic data capture was performed using the STATA software package.

FINDINGS AND DISCUSSION

The variables affecting learners' academic performance at Ordinary Level in Zimbabwean secondary schools are discussed under pre-school environment, pre- 'O' Level context, socio-economic context and school quality.

Research hypotheses

All the null hypotheses shown above were rejected as reflected by the findings in the research study.

There was a near statistically significant association between gender of study respondent and the perception towards the learners' performance ($p=0.079$). The statistical significant association at <0.05 level of significance suggested that the gender of study respondents and perception towards the learners' performance was good.

There was a statistically significant association between age of study respondent and the perception towards the learners' performance ($p<0.001$). The computed p value between the age of study respondents and the perception towards the learners' performance was <0.001 which implied the rejection of the null hypothesis.

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There was a statistically significant association between position at the organization of study respondent and the perception towards the learners' performance (p=0.042). The computed p value of the two in question was 0.042. Therefore, the decision was to confirm the affirmative hypothesis.

There was a statistically significant association between the education level of the study respondent and the perception towards the learners' performance (p=0.022). The computed p value of the two in question was 0.022. Based on the available evidence, the decision was to hold the affirmative hypothesis.

There was a statistically significant association between number of years at the organization of study respondent and the perception towards the learners' performance (p<0.001). The statistical significance association at <0.05 level of significance indicated that the number of years at the organisation of the study respondent and the perception towards learners' performance was pleasing. The computed p value was <0.001. The decision was to reject the null hypothesis.

There was a statistically significant association between the perspective towards socio-economic context of the study respondent and the perception towards the learners' performance (p<0.001). The computed p value was <0.001 which implied the rejection of the null hypothesis.

There was a statistically significant association between the perspective towards school quality of the study respondent and the perception towards the learners' performance (p<0.001). It was shown that there was a relationship between the perspective towards school quality of the study respondent and the perception towards learners' performance as indicated by the computed p value <0.001 which implied the rejection of the null hypothesis.

RESEARCH QUESTION

Which variables affect learners' academic performance at Ordinary Level in secondary schools?

As already alluded, the question would be answered under pre-school environment, pre-'O' Level context, socio-economic context and school quality variables and are given below:

Pre-school environment

Both the questionnaires and the interviews confirmed that malnutrition had an impact on the child's future academic performance in school. Malnutrition affects the child's health and so directly or indirectly on his/her ability to socialise (Fuller, 2017).

On poor living conditions, the responses in close-ended part of the questionnaire found out that they influenced academic achievement of learners at school. Some interviewees noted that poor living conditions affected learners' academic performance later at school. Review of related literature supported the researcher's findings on the variable. According to Fuller *et al.* (2017) poor living conditions affect the child's academic performance later in school.

The researcher accepted that verbal interaction between child and adults affected academic achievement of the child in later life as indicated by the study respondents in close-ended portion of the questionnaire and also in the interviews. Hughes *et al.* (2006) reveal that the quantity of verbal interaction between the child and adults may promote higher intellectual development and academic achievement later in the child's life.

In a close-ended section of the questionnaire, the research study respondents accepted the notion that pre-natal damage might affect academic achievement of the child. The same was noted in the semi-structured interviews. Rosenberg & Weller (1973) point out that pre-natal damage may influence the child's academic performance.

Pre- 'O' Level context

It was confirmed by the researcher that there were variables of pre- 'O' Level status which had an influence on learners' academic achievement as revealed by respondents in the questionnaire. In semi-structured interviews, it was earmarked that the child's performance during ECD period and from ECD to Grade 5 had a bearing on school attendance later in life. The children who attended two years of Early Childhood Development (ECD) were better than children who would have not attended ECD. The Ministry of Primary and Secondary Education recommends nine years of primary education. According to Lopez *et al.* (2007) kindergarten attendance seem to have a lasting impact on both verbal and mathematics achievement and on reading skills

In the questionnaire, there was confirmation by the research study respondents who agreed that the entry mark had a bearing to the learners' performance. The interviewees accepted the notion that Grade 7 results had a bearing on learners' academic performance. The respondents indicated that secondary schools should enrol Form I learners with good Grade 7 passes and such learners would likely be able to obtain high academic performance at Ordinary Level.

It was agreed in the questionnaire and in the semi-structured interview that learners' attitude after primary school had a bearing on academic performance at Ordinary Level. If learners have a negative attitude towards school, academic achievement would hardly be attained. Many learners if not all had attended primary education being day scholars and could not augur well

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to carry on being day scholars in secondary schools as revealed in the semi-structured interviews. They had a feeling to attend at boarding secondary schools. The findings on the stated variables are confirmed in many other studies (Fuller, 2017; Lopez *et al.*, 2007; Douglas, 2015).

Socio-Economic Context

It was confirmed by the researcher that there were variables of socio-economic context which influenced academic performance of learners. Home conditions have an influence on academic performance of learners as indicated by most of the research study respondents in the close-ended portion of the questionnaire. Some interviewees mentioned that home conditions had a bearing on the learners' academic performance. During the school years, socio-economic factors continue to exert an influence on the achievement of children (Hartas, 2011). Research by Fraser (2012) has shown that certain factors in the home particularly economic, motivational and emotional ones, influence progress at school in a way which is to some extent independent of intelligence.

It was noted with regret in semi-structured interviews that learners from families of poor economic status found it difficult to make ends meet in schoolwork. One of the interviewees who happened to be the school guidance and counsellor observed that girls from poor families resorted to indecent activities and forgot about schoolwork. The higher the parents' occupational status, the greater their children's reading, mathematics, and general academic ability. The higher the prestige of the parents' occupation(s), the better the children perform in school (Usaini & Abubakar, 2015).

Low family income can negatively affect learners' performance as that influenced the payment of school fees and levies and in turn affected regular learner attendance (Nkaiwuatei & Joseph, 2013). Some learners were always sent home to collect fees and therefore did not perform well as a result of missing out on lessons conducted in their absence. Nakhanu (2009) establishes that absenteeism of learners affects syllabus coverage and therefore contributes to low performance.

Parental education has a bearing on learners' performance. In semi-structured interviews, it was agreed that parents who had some education supported their children in school by paying fees and levies in time. Little knowledge is dangerous. On both open-ended questionnaire and close-ended section of the questionnaire, it was noted that parents with reasonable level of education supported their children in schoolwork. The level of parents' education to have an influence on academic performance, has been reported in many studies (Douglas, 2015; Ebhohimen, 2017; Magati, Bosire & Ogeta, 2015). As evidenced in semi-structured interviews, parents who had the right attitude to schooling supported the children. They even phoned to the school enquiring about their children's welfare. According to Hanushek (2005), parents who have a negative attitude to their children's academic performance are not likely to spend money providing essential learning materials.

In a study done by Khan, Iqbal and Tasneem (2015), educated parents display much interest in their children's academic performance. The parents act as role models and their children have higher aspirations for their education (Ntitika, 2014).

The study confirmed in the questionnaire and in the interview that parents who assigned many chores to their children at home had their children's performance affected at school. It is reported in related literature that parents who assign many chores to their children at home have their children's academic performance significantly affected (Fuller, 2017; Ebhohimen, 2017). It may be that more affluent families do not require that children contribute to the household income. It helps the child to have considerable time for school attendance.

In the questionnaire and during observation, it was found out that child-headed families had an influence on learners' academic performance. It was observed that many children in the surrounding homes of child-headed families left their homes and joined rather the broken homes just to play and nothing else. Such behaviours affected learners' academic performance. It was observed that many children from child-headed families were hardly punctual to school activities. There was nobody to push them in observing punctuality to school functions. In semi-structured interviews, it was echoed that at times some children ran short of food at home. Really in such situations, schoolwork greatly suffers.

The issue of child-headed families due to some parents who could have gone to diaspora for greener pastures were encountered. The parents might also have died due to HIV/AIDS and the recent Coronavirus pandemic. In related literature, child-headed households often had pressures of taking care of siblings making sure that they had food on the table and in the event of sickness they had to go to hospital with the ill siblings even on a school day. The divided attention on schoolwork most likely contribute to poor academic performance (Nekongo-Nielsen, 2011).

The research study respondents in the close-ended section of the questionnaire and in the semi-structured interview agreed that a high number of siblings in a family affected learners' performance. The research study confirmed that there was a moderate relationship between family size and academic performance. It could be argued that if the family size became smaller, the parents could be able to provide especially educational materials for the fewer children.

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All things being equal, the time that parents spend with each child is reduced when there are more children in a family and the probability of getting high grades has to be reduced (Desforges & Abouchaar, 2003a).

School Quality

It was confirmed by the researcher that there were variables of school quality status which affected learners' academic performance. On teaching experience, the research study respondents agreed that the experience of the teacher influenced learners' performance after having analysed responses from the questionnaires and semi-structured interviews. Some interviewees indicated that teacher's experience was crucial in learners' academic achievement. Hedge (2001) points out that the more recent a teacher's last educational experience, the higher learners seem to achieve in reading.

Teacher behaviours within their classrooms including efficient use of instructional time, the extent to which teacher's ability to place learners in learning roles had been shown to have an impact on learners' academic achievement. The teacher should take individual differences of learners and treat them differently in accordance with his/her differential expectations (Cohen & Manion, 2005). One of the interviewees indicated that teacher's experience was crucial in learners' academic achievement. There was an adage that "new brooms sweep clean but old ones know the corners". Research shows that the teacher's teaching experience has a positive impact on learner's academic performance (Vanderhaar, Muñoz, & Rodosky, 2006). Ebhohimen (2017) concludes his findings that teacher's professional qualifications and teaching experience can bring variation in academic performance. Nyagura and Reece (2003) have summarised empirical results relating to teacher variables and learner achievement in 21 underdeveloped countries and they have found out that teacher-related variables have effects on learner achievement.

Class size was found to have a bearing on learners' academic achievement. In document analysis, it was observed in attendance registers and mark books that the number of learners recorded were 50 or more. In open-ended portion of the questionnaire, it was moderately stated that class size had an impact on learners' academic achievement. In semi-structured interviews, Some interviewees complained that teacher-learner ratio of 1 :> 50 was very high and suggested teacher-learner ratio to be 1:35.

One of the interviewees who was not happy with 'O' Level results cited the following reasons:

> *Class size is quite alarming. Each class has 50 or more learners and individual differences are difficult to cater. Discipline in the school leaves a lot to be desired. Lack of motivation for both teachers and learners and lack of time resources due to double sessions negatively impacted on learners' achievement.*

According to Slavin (1993), an additional learner in class is sometimes found to have a positive effect, sometimes a negative effect and sometimes no effect at all on the average achievement of learners. There is highly significant relationship between learners-per- teacher and achievement (Heneveld, 1994). However, class size is purportedly not a significant influence on achievement (Hanushek, 2004; Burch, Theoharis, & Rauscher, 2010).

On teacher's qualification and academic achievement in the questionnaire and semi-structured interview, it was agreed that the education level of the teacher affected learners' performance. The variable is supported by related literature (Saha cited in Nyagura & Reece, 2003; Ebhohimen, 2017; Vanderhaar, Muñoz, & Rodosky, 2006). It was confirmed in a close-ended section of the questionnaire that adequacy of infrastructure such as school buildings, libraries, laboratories, and textbooks had a positive effect on learner's academic performance. The same was mentioned in the semi-structured interviews. In document analysis, it was noted that almost all secondary schools had inadequate infrastructure as evidenced by hot-sitting. Libraries were not built but many secondary schools improvised store-rooms to use as libraries. In related literature, Nyagura (2003) points out that availability of school library has a highly significant influence on English achievement. However, (Fuller *et al.*, 2017) argue that laboratories are not related to higher learner performance.

On supervision by school Heads, deputy Heads and HODs, the variable was found to be of great significance to learners' academic achievement. It was mentioned in semi-structured interviews and in the questionnaire that supervision was of necessity if academic achievement could be realised. In related literature, supervision seems to influence learner achievement (Mukokoromba, 2015).

It was confirmed that teachers would improve on their work if they attended staff development courses. It was mentioned in the semi-structured interviews that staff development/in-service courses were essential for academic achievement of learners. On open-ended part of the questionnaire, it was repeatedly mentioned that the strategy in question was necessary for teachers to be well equipped with techniques important for teaching and learning. Nyagura and Reece (2003) discover that there is minimum effort directed at school, district, and provincial staff development activities for secondary school teachers to raise the quality of instruction which in turn leads to higher learner achievement.

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The respondents agreed that lack of time management influenced learners' performance. It was the respondents in the questionnaire who agreed that good management positively influenced learners' performance. In semi-related interviews, one of the interviewees said the ability of the Head in organising learning situations in the school had an impact on learners' academic achievement. Head's management abilities have been shown to be significantly related to academic achievement (Fuller, 2017). Purkey and Smith (1983) argue that effective leadership is necessary for initiating and maintaining the improvement process in schools. Poor leadership was usually accompanied by declining standards in academic achievement, poor school facilities and low morale of both learners and teachers (Harrison, Bunford, Evans, & Owens, 2013).

Fuller's (2017) findings indicate that the status and academic qualification of the Heads may be related to management abilities. School Heads need to ensure that delegated tasks are carried out on time and in a proper manner.

Adequate teaching and learning resources such as textbooks, supplementary readers, stationery, and equipment had an influence on learners' academic performance as evidenced in open-ended questionnaire and semi-structured interviews. Teaching and learning resources such as textbooks, work cards and other learning materials were very significant as they enabled the teaching and learning to be learner-centred. Ebhohimen (2017) & Fuller (2017) claim that teaching and learning resources enhance learners' academic performance.

CONCLUSIONS

Eight conclusions were derived from the findings on the topic in question as follows:

Several schools did not have sufficient textbooks. The learners had to share textbooks in the ratio 1:4. There were plenty textbooks of Education Transition Fund which were donated by UNICEF and Government some few years back, but many schools no longer had those textbooks.

- It was concluded that Performance Lag Address Programme (PLAP) was not effectively implemented in secondary schools due to that PLAP and special classes were one thing.
- It could be safely concluded that supervision was done below par since school administrations were engaged in many other duties including attending to visitors, parents, and guardians.
- There were misplaced teachers in schools. One of the teacher's files had information of a teacher trained to teach Metalwork but was teaching Science.
- The Ministry of Primary and Secondary Education had a policy of not paying relief teachers who would have replaced permanent teachers on maternity leave or on other leave. If the school development committee could not get funds to pay the teachers to be on replacement, the classes would go for three solid months or so without teachers.
- There were learners who were orphans due to, for example, both parents had died because of HIV/AIDS and Coronavirus pandemic. The learners had financial problems and they found it difficult to attend schools regularly.
- It was concluded that there were some learners who misbehaved. They went for beer-drinking, drug abuse and child prostitution. The learners indulged in such behaviours to the extent of neglecting schoolwork.
- There were four main determinants of academic achievement namely pre-school environment, pre-'O' Level context, socio-economic context and school quality. The period from ECD to Grade 5 was quite a long time before a learner could sit for public examinations. Research coverage in the area in question was minimal.

Recommendations

In the light of the findings and conclusions of the research study, the following eight recommendations were made:

- It was recommended that schools should avail adequate teaching and learning resources. Many schools were found with insufficient textbooks. The learners had to share textbooks in the ratio 1:4.
- The study recommends that Performance Lag Address Programme be implemented in full force. In fact, PLAP, remedial lessons and special classes were one due to that the programmes were for helping slow learners. However, repetition was necessary for more understanding.
- Every secondary school should have instructional supervisors in different subject departments like science, humanities, languages, practical and technical subjects to oversee the instructional activities and processes in the school. The instructional supervisors should specifically concentrate on guiding teachers on teaching methodologies and other related areas.
- School Heads should place teachers in their subjects for which the teachers were trained to teach while at college. If the school Head is given a teacher with the qualification not required in the school, the school Head should return the teacher to Public Service Commission for redeployment elsewhere. There was need to redeploy teachers to schools where their services were needed most.
- The Ministry of Primary and Secondary Education should revisit some of its policies,

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for example, no replacement of teachers on maternity leave and sick leave. The learners sometimes would go for three solid months or so without teachers unless the school development committees would pay for the relief teachers. The Ministry in question should pay for relief teachers when permanent ones would be on leave.

- Learners who had financial problems due to that, for example, both parents had died of HIV/AIDS and Coronavirus, should be recommended to organisations which could assist them financially such as Red Cross, Higher Life Foundation, SOS and also Basic Education Assistance Module (BEAM). The learners in question needed great financially assistance in order to attend school properly.
- The disciplinary committee in the school should take strong measures against learners who misbehave even when being out of school, for example, visiting beer halls and practising prostitution. At times it is good to involve parents/guardians in as far as discipline is concerned. Everybody should be on duty in disciplinary matters and not to leave it to a few individuals. The country is eager to produce good citizens.
- Further research should possibly be conducted assessing variables on pre- 'O' Level context especially from ECD to Grade 5. It is very necessary since pre- 'O' Level context is a long period which needs to be taken into consideration for the learners' academic performance.

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