Preparing Students for Higher Education: Zimbabwe Secondary School Teachers' Perceptions on Research

Dr. Sophie Masuku
Director, Office of Research and Publications, Zimbabwe
Stella Muchemwa
Head of Department, Languages and Communication, Solusi, Zimbabwe

Abstract:
Learning to research at an earlier age is beneficial to students when they get to higher education, a level profoundly associated with research. This quantitative study investigated the views of teacher on students' research at secondary school level in Zimbabwe. Questionnaires were distributed to a purposive sample of 127 secondary school teachers (Solusi University Bachelor of Education students) who came for December, 2014 Block Release from all the 10 provinces of Zimbabwe. Data was analyzed by SPSS. Finding revealed there was a high administrative support for students to do research which is shown by a mean 3.6638 and standard deviation 0.96352; also a high teacher motivation and teacher preparedness mean, 4.1345 and 3.9990 respectively. An r value of .678 showed a strong positive relationship between teacher preparedness and student motivation. There was a positive beta value of 0.398 on administrative support and 0.394 on teacher preparedness though an ANOVA of p = 0.012 <0.05 showed a significant difference in responses on teacher preparedness. An independent t-test shows a difference on day schools and boarding schools on resources and student motivation with p = 0.00 < 0.05 and 0.001 < 0.05 respectively.

Keywords: Research, higher education, students

1. Introduction

Education has an important role in the modern world; to make learners develop into liberated thinkers who can reason rationally, read analytically and communicate convincingly. These abilities are inculcated in a learner chiefly through research. Hence, research becomes an essential engagement of a learner as early as at primary school level where it enables a learner to generate knowledge. This therefore means that since knowledge is not inert and is acquired, both the teacher and the learner have roles to play in its acquisition.

Research is mandatory at higher education. Retya (2010) argued that every student in university has to conduct a research as a requirement before they graduate. Research is a complex time consuming exercise that involves framing questions, finding information, analyzing the collected data using the appropriate tools, evaluating different viewpoints and exposing the findings (Fister 2001). It is painstaking process which authors of Academic Research, a Painful Process for Students (2009) argued, "We have found that no matter where students are enrolled, no matter what information resources they may have at their disposal, and no matter how much time they have…Research seems to be far more difficult to conduct…." Ocadiz (2015) added that a thesis statement is one of the most critical parts of a research because it states the purpose of the research. He also finding relevant data to support an argument in research is not easy. It is therefore necessary to expose learners to research early in their academic life so that research skills develop over time.

In Zimbabwe, research by secondary school students in is rather minimal and is mainly limited to subjects that are research oriented, for instance, Geography and Agriculture. This is so because the education system in Zimbabwe is examination-driven (Mano 2001) and research is rarely part of the final examinations for most of the "O" Level and even "A" Level. The problem is global; Bhattcharya (2005) purported that the problems faced by a professor while carrying out research work with an undergraduate student are the latter's lack of knowledge and lack of experience. However, scholars like Donnelly (2004) and Yecke (2005) quoted in Ncube (2013) called for an extended standardized testing practice and place much greater emphasis on formal whole class learning.

School programs should be relevant and should contribute to national development in order to fulfill the Zimbabwe Agenda for Socio Economic Transformation (ZIMASET) national goals. ZIMASET is Zimbabwe's new economic blueprint which is being modeled in line with the Zimbabwe African National Union Patriotic Front (ZANU PF) 2013 election manifesto and campaign under the theme, "Indigenize, Empower, Develop and Create Employment". The relevancy of a school curriculum is also supported by Bangser (2008)

who argued that students' high school experiences too often fail to prepare them for postsecondary. He suggested that education High school curricula need to be rigorous, relevant, and engaging to prepare students for successful postsecondary activities. Students benefit a lot if an effective study program is organized in the school (Musingafi and Zebron 2014). The curriculum should therefore be transformed and developed so as to make it more aligned to the learner's future academic needs as well as the country's socio-economic cultural and skilled manpower requirements.

High school research paper topics should be simple but thought provoking. Research expose learners to critical and democratic thinking, participation and working together, dialog with the supervisor, ability to express self, ability to plan an inquiry, personal development, action and change (Research Paper Writer 2010).

In order to teach research skills successfully at high school level, collaboration of interested parties, that is, the students, teachers, school administration parents and others, is necessary. Ncube (2013) argued that a school is an organization in a changing and complicated social context, and in Zimbabwe is bounded by limited resources and involving multiple constituencies such as education authorities, school managers, teachers, learners, parents and the public. The multiple constituencies have major roles to play for the effectiveness and success of school programs like research program. This is the main concern of this study.

1.1. Research Problem
Many students enter university with very little or no research skill mainly because it is hardly taught at primary school level. However, research is an integral part of university education. This gap between the school and the university education requirement pose a lot of challenges to students when they are tackling research at university. This study answered the following research questions:

1.2. Research Questions
1.   What are the perceptions of teachers on students 'preparedness to do research at secondary school?
2.   Do school administration support students' research at secondary school?
3.   Are there any differences between Day-School and Boarding-School teachers' preparedness to teach research at secondary school?

2. Materials and Methods
A quantitative research methodology was employed in the study. A purposive sample of 127 Zimbabwean secondary school teachers (Solusi University Bachelor of Education students) who came for December, 2014 Block Release from all the 10provinces of Zimbabwe was used. The characteristic of the sample is shown on the table below.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Matabeleland North	22	17.3	18.0	18.0
	Matabeleland South	19	15.0	15.6	33.6
	Midlands	25	19.7	20.5	54.1
	Manicaland	14	11.0	11.5	65.6
	Mashonaland West	9	7.1	7.4	73.0
	Mashonaland East	6	4.7	4.9	77.9
	Mashonaland Central	5	3.9	4.1	82.0
	Masvingo	16	12.6	13.1	95.1
	Harare	4	3.1	3.3	98.4
	Bulawayo	2	1.6	1.6	100.0
	Total	122	96.1	100.0	
Missing	System	5	3.9		
Total		127	100.0		

Table 1: Participants by Province

The gender of the participants is shown below:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	77	60.6	62.1	62.1
	Male	47	37.0	37.9	100.0
	Total	124	97.6	100.0	
Missing	System	3	2.4		
Total		127	100.0		

Table 2: Participants by Gender

Researchers' administered their self-constructed questionnaires to the respondents. Collected data was analyzed by SPSS.

3. Results and Discussion

Table 3 below shows the perceptions of teachers on students' preparedness to do research at secondary school level. The teachers indicate that there is administrative support for students to do research as indicated by a mean of 3.6638 and the standard deviation of 0.96352. These figures show that there was homogeneity in their responses. Teacher motivation and teacher preparedness also had a high mean of 4.1345 and 3.9990 respectively which also indicates that teachers agree that they are both motivated and prepared to teach research to their students. These findings tally those by Anderman Andrzejewski and Allen (2011) found in their extensive study of 2864 students that supportive teachers motivate students. The standard deviations of .87207 and .81537 respectively indicate that the teachers are homogeneous in their responses.

Resources, curriculum and student motivation had the lowest means of 3.0496, 3.1554 and 3.2871 respectively. This indicates that teachers were neutral as to whether resources for research were available in the schools, whether the curriculum supported student research and whether the students were motivated to do research. This is another indicator that research is not very prominent in the secondary schools, hence respondents were not sure of what to say. Resources should be adequate as Biddle and Berliner (2002) argued that students do better in well-funded schools and that public education should provide a level playing field for all children.

The standard deviations of 1.27868 and 1.03081 on resources and curriculum show heterogeneity of response. On student motivation, the standard deviation of .87196 also indicates homogeneity of responses.

	Mean	Std. Dev.
Curriculum	3.1554	1.03081
Administration Support	3.6638	.96352
Resources	3.0496	1.27868
Teacher Preparedness	3.9990	.81537
Teacher Motivation	4.1345	.87207
Student Motivation	3.2871	.87196

Table 3: Teacher perception on research preparedness of students

The step wise regression analysis was done to find out the extent to which curriculum, administrative support, resources, teacher preparedness and teacher motivations had an effect on student motivation to do research. The variables that were included were the administrative support and the teacher preparedness. The coefficient of .581 on administrative support indicates that there is a strong positive relationship between administrative support and student motivation for research. School administration has realized what Musingafi and Zebron (2014) have also realized in a research that students benefit a lot if an effective study program is organized in the school, for this instance, research. There is also a strong positive relationship between teacher preparedness and student motivation to do research as indicated by r value of .678.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581[a]	.338	.331	.69993
2	.678[b]	.459	.447	.63603
a. Predictors: (Constant), Administration Support				
b. Predictors: (Constant), Administration Support, Teacher Preparedness				

Table 4: Model Summary

Table shows an f value of 46.481 on administrative support which is significant at p = 0.000<0.05 and f value of 38.247 on teacher preparedness at p = 0.000< 0.05. This indicates that this regression is true and not by chance.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.771	1	22.771	46.481	.000[a]
	Residual	44.581	91	.490		
	Total	67.352	92			
	Regression	30.944	2	15.472	38.247	.000[b]
	Residual	36.408	90	.405		
	Total	67.352	92			
a. Predictors: (Constant), Administration Support						
b. Predictors: (Constant), Administration Support, Teacher Preparedness						
c. Dependent Variable: Student Motivation						

Table 5: F Value

Table 6 shows a positive beta value of 0.398 on administrative support which indicates that as administrative support increases, student motivation to do research also increased. The positive beta value of 0.394 on teacher preparedness to teach students to do research increases, the student motivation to do research also increases.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	.428	.331		1.292	.200
	Administration Support	.344	.076	.398	4.546	.000
	Teacher Preparedness	.390	.087	.394	4.495	.000
a. Dependent Variable: Student Motivation						

Table 6: Coefficients[a]

ANOVA was done on the provinces. The province of Bulawayo was left out since it had only two respondents and post hoc could not be done with that. There was a significant difference in responses when it came to teacher preparedness with a p = 0.012 <0.05. The difference was noted to be between Mashonaland Central with a mean of 4.7778 and Masvingo with a mean of 3.5556.

		Sum of Squares	df	Mean Square	F	Sig.
Curriculum	Between Groups	4.139	8	.517	.512	.845
	Within Groups	96.976	96	1.010		
	Total	101.115	104			
Administration Support	Between Groups	3.215	8	.402	.488	.862
	Within Groups	82.294	100	.823		
	Total	85.509	108			
Resources	Between Groups	12.563	8	1.570	.993	.446
	Within Groups	167.569	106	1.581		
	Total	180.131	114			
Teacher Preparedness	Between Groups	9.860	8	1.233	2.610	.012
	Within Groups	47.222	100	.472		
	Total	57.082	108			
Teacher Motivation	Between Groups	4.654	8	.582	.928	.497
	Within Groups	62.073	99	.627		
	Total	66.727	107			
Student Motivation	Between Groups	2.263	8	.283	.402	.917
	Within Groups	73.229	104	.704		
	Total	75.493	112			

Table 7: ANOVA

An independent t-test was done to find out the difference in responses between those teachers who teach in the day schools and those who teach in the boarding schools. Table 8 shows that the difference was noted on resources and student motivation with p = 0.00 < 0.05 and 0.001 < 0.05 respectively. On resources, day schools had a mean of 2.8058 while boarding schools had a higher mean of 4.2302 an indicator that there are better research related resources at boarding schools than at day schools. On student motivation, the day school had a mean of 3.2039 and the boarding school a mean of 3.7576.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Curriculum	Equal variances assumed	.969	.327	-1.782	106	.078	-.43011	.24138	-.90868	.04845
	Equal variances not assumed			-1.620	25.769	.117	-.43011	.26553	-.97615	.11592
Admin Support	Equal variances assumed	.228	.634	-1.901	111	.060	-.41343	.21743	-.84429	.01743
	Equal variances not assumed			-2.115	34.080	.042	-.41343	.19550	-.81069	-.01617
Resources	Equal variances assumed	6.176	.014	-5.218	116	.000	-1.42432	.27294	-1.96491	-.88373
	Equal variances not assumed			-6.714	41.931	.000	-1.42432	.21214	-1.85246	-.99617
Tr Preparedness	Equal variances assumed	.991	.322	-1.486	110	.140	-.28435	.19131	-.66347	.09477
	Equal variances not assumed			-1.825	27.553	.079	-.28435	.15583	-.60379	.03510
Tr Motivation	Equal variances assumed	.733	.394	-.226	109	.822	-.04339	.19226	-.42444	.33767
	Equal variances not assumed			-.265	37.429	.793	-.04339	.16387	-.37528	.28851
Student Motivation	Equal variances assumed	4.376	.039	-2.924	114	.004	-.55368	.18937	-.92882	-.17853
	Equal variances not assumed			-3.716	45.562	.001	-.55368	.14900	-.85368	-.25367

Table 8: Independent Samples Test

When it came to gender, there was no significant difference in the teachers' responses.

From the research findings, it can be concluded that teachers and school administration are research conscious and are supportive to research while students are prepared to tackle research at high school. The involvement and support rendered by these constituencies motivate student to carry out research. However, research resources are not adequate especially in day- schools which can be one of the reasons why research is limited in secondary schools. This is in line with Ncube (2013) findings that school are bounded by limited resources and involve multiple constituencies including education authorities, school managers and parents. The research also showed that boarding schools have more research related facilities that the day school.

The study recommends that educationalists and school administrations should support research in secondary schools especially by providing necessary resources for research. Also, Zimbabwe secondary school curriculum should involve more research related examinable items for it to be rigorous and relevant as well as prepare students for successful postsecondary demands and activities.

4. References

i. Academic research, a painful process for students (2009).http://acrlog.org/2009/02/18/academic-research-a-painful-process-for-students/
ii. Anderman, L. H; Andrzejewski, C. E & Allen, J. (2011).How Do Teachers Support Students' Motivation and Learning in Their Classrooms?
iii. http://www.tcrecord.org/Content.asp?ContentId=16085
iv. Bangser, M. (2008).Preparing High School Students for Successful Transitions to Postsecondary Education and Employment .www.betterhighschools.org/
v. Bhattacharya, S. (2005). Research Experience with Undergraduate Students and its Effect on Development of Academic Laboratory. 35th ASEE/IEEE Frontiers in Education Conference F1F-19
vi. Biddle, B. J. and Berliner, D.C. (2002).A Research Synthesis / Unequal School Funding in the United States. http://www.ascd.org/publications/educational-leadership/may02/vol59/num08/Unequal-School-Funding-in-the-United-States.aspx
vii. Research Paper Writer (2010).http://researchpaperwriter.net/blog/research-paper/high-school-research-paper-topic
viii. Mano, R. Z. (2001).Zimbabwe's Secondary Educational System: A Solid Foundation for Undergraduate Education. Retried on October 15, 2012 from http://www.bibl.u-szeged.hu/oseas_adsec/zimbabwe_sec.htm
ix. Musingafi, M.C.C and Zebron,S. (2014). The Classroom Situation: Improving Study Habits of Secondary School Students in Zimbabwe http://www.academia.edu/8701135/The_Classroom_Situation_Improving_Study_Habits_of_Secondary_School_Students_in_Zimbabwe
x. Ncube, A. (2013). Students' Failure, a Shared Blame in Zimbabwean Secondary Schools-The Way Forward http://www.academia.edu/5320348/Students_Failure_a_Shared_Blame_in_Zimbabwean_Secondary_Schools-The_Way_Forward

Appendices

You are invited to participate in a research study entitled, *Preparing Students for Higher Education? Zimbabwe Secondary School Teachers' Perceptions on Research*. This study is conducted by Dr Sophie Masuku and Mrs Stella Muchemwa and its purpose is to investigate teachers' views on students' research at secondary school. Learning to research at an earlier age is beneficial to the students when they get to higher education. This study is purely academic and all the information will be treated with confidence
Do not write your name in any of the papers.
Thank you.

Section A

1. Province: _____
2. Type of School: a)   Day School (   )   b) Boarding School (   )
3. Gender: a)   Male   (   )   b) Female   (   )
4. Subjects taught:_____

Section B

On the following scale of 1 – 5, 5 = strongly agree; 4 = agree; 3 = neutral; 2 = disagree; 1 = strongly disagree, please rate the degree that you agree with the following statements by making a check mark on the appropriate box.

	Item	5	4	3	2	1
	CURRICULUM					
4	The curriculum in my school gives room for student research					
5	Time is allocated for research					
6	Research in my school is a curriculum requirement					
7	Each teacher is required to be involved in research activity with their students					
	ADMINISTRATIVE SUPPORT					
8	My school encourages critical thinking					
9	My school encourages enquiring minds					
10	The administration encourages teachers to do research					
11	The administration encourages field trips					
	RESOURCES					
12	My school has computer labs					
13	My school owns computers					
14	There is internet in our school					
15	The internet is fast in our school					
16	We have library facilities in our school					
17	We have books for students to refer to when doing research					
	TEACHER PREPAREDNESS					
18	I know how to navigate the computer					
19	I have a knowledge of computers					
20	I am able to assist my students in researching on the internet					
21	I have research skills					
22	I can assist my students on how to do research					
23	I encourage my students to ask questions					
24	I send my students to research on topics of interest					
25	My students are encouraged to present their findings					
26	My students are encouraged to state the sources of their material					
	TEACHER MOTIVATION FOR RESEARCH					
27	I like to spend time using the computer for academic purposes					
28	I refer to the internet on what I do not understand					
29	I do my own research during spare time					
	STUDENT MOTIVATION FOR RESEARCH					
30	Students spend time researching on the internet					
31	Students spend time in the school library					
32	Students use other outside sources to do their assignments					
33	Students ask questions about their assignments					
34	Students like to go on field trips					
35	Students enjoy making presentation to their peers.					