

Barriers Inhibiting Utilization of Educational Research Findings within the School System: Views of Botswana Junior Secondary School Teachers

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Abstract: This is a survey research design study carried out to determine the views of Botswana Junior Secondary School teachers on the barriers inhibiting the utilization of educational research findings within the school system. A questionnaire was designed, validated, pilot tested and administered on 200 Junior Secondary School teachers in the South Central region of Botswana. Out of which 156 responses were collected and analysed using factor analysis (available on the SPSS computer software package), to find the main barriers inhibiting the utilization of educational research findings among Junior Secondary School teachers in Botswana. The principal factor analysis with iteration was employed and varimax rotation method was also used. From the results of the factor analysis, eight (8) meaningful barriers with eigen values greater than one emerged from the responses of Junior Secondary School teachers to the thirty (30) items on Utilization of Educational questionnaire. These eight (8) emerging barriers would inform the Botswana Educational System on the barriers inhibiting Junior Secondary School teachers in utilizing educational research findings in schools.

Keywords: Barriers; Inhibiting; Utilization of research findings.

1. Introduction

Researchers in education have been advocating for some time on how to bridge the gap between research and practice in the educational system. For example, Hattie (2009), summarized more than 800 published research findings in education, and these research findings suggested effective strategies and techniques for teaching and learning. But despite all the efforts of these researchers in education, there is still little or no use of these research findings within the educational system. According to Osuala (2001), Awotunde & Ugodulunwa (2004), 'Educationalist, especially at the tertiary level have to increasingly devise means of enhancing the teaching-learning process through access to and utilization of research findings which is viewed as ways of improving the quality of teaching at all levels of education'.

The utilization of research findings is generally not of high priority within the secondary school educational system especially in Africa, but currently there is a growing recognition among educationists of the importance of research and its findings in improving the quality of teaching and learning outcomes in schools. This was highly supported by Osuala, (2001) who stressed that "The focus on utilization of research findings in any educational system is derived from the quest for knowledge to improve the quality of education in the school system and educationalists have always devised means of enhancing the teaching and learning processes through adequate access to and utilization of research findings in education which is viewed as a means of improving the quality of teaching at all levels of education".

Stafford (2006), emphasized that effective teaching should involve the practical application of new research or theory in the classroom environment and that integrating new educational research findings into classroom instruction should improve both the teachers' instruction and student learning outcomes. The National Council of Teachers of English (NCTE, 1998-2013), also stressed that teachers should play a pivotal role in conducting and evaluating research, which mean that teachers should be well grounded in research skills due to the challenges and constant changes in the global development and technological advancement of countries in the world. NCTE suggested further, that

teachers could use research to reflect on other people's ideas and in turn generate their own research findings which should also be shared with other educators. This means that the integration of research findings can be instrumental in improving instructional classroom practices and learning outcomes of students in secondary schools.

2. THE PROBLEM

Despite the usefulness of research to teaching and learning outcomes in the educational system, there is little or nothing with regards to research findings utilization by Botswana Junior Secondary School teachers. This is exacerbated by the unavailability of a policy on the usage of research findings in the school educational system. As a result there is nothing in place to guide and compel teachers to either engage or integrate educational research findings in their classroom instructional practices to improve the quality of education in Botswana. The greater concern for many schools in Botswana is the declining performance of students in external or public examinations which suggested that there is need for teachers to be proactive and utilize research findings in their classroom practices in order to improve students' learning outcomes and performances in schools. Apart from schools in Botswana, a report by UNESCO (2000), indicated that only a small portion of children are reaching the required competencies and the educational systems are not performing to the expected standards. The aim of the Botswana educational system is to improve the quality of education, ensure higher standards of learning and improve the quality of instruction for all those who attend school (Revised National Policy on Education (RNPE, 1994) which states under its philosophy and aims of Botswana Education Policy that the general objectives of national education should be to " provide life-long education to all sections of the population" (pg. 5), hence there is the need to engage in research activities and to utilize research findings in schools in order to achieve the vision of the government. Despite the importance of research findings in any educational system, there are some barriers inhibiting the utilization of these research findings in the educational system, and Botswana education system is an example.

The purpose of this study is to determine the barriers inhibiting Botswana Junior Secondary School teachers' utilization of educational research findings in improving the quality of teaching and learning outcomes in secondary schools. The research questions addressed for this research study were as follows:

- What are the barriers inhibiting the utilization of educational research findings as viewed by Botswana junior secondary school teachers?.
- Are there significant differences among Botswana junior secondary school teachers with respect to teachers' gender or years of teaching experience in relation to the barriers inhibiting the utilization of educational research?

3. LITERATURE REVIEW

Researchers have investigated on the research use obstacles within the education system, Crosswaite and Curtice (1994), suggested that research use obstacles included lack of researchers knowledge about communications methods, rapidly changing communications technology and fear that findings would be misinterpreted by the media. Rose (2010), emphasized that another common barrier of not using research findings is that educational research is often inconclusive or that positive findings are couched in overly cautious conditions such as small sizes or the nefarious words, "more research is needed". Rose (2010), concluded that researchers themselves admit that "...we academic types can be long-winded, reliant on jargon, and given to tangent or an endless loop of qualification and nit-picking". Kaestle (1993), stressed that " a recurring issue on the barriers of utilizing research findings is the complex language inherent in most educational research publications that tend to deflect public and policy interest".

Wolk (2007), stated that many well-known reasons why research did not have the desired impact on teaching and learning in his article, *Education Research Could Improve Schools*, *But Probably Won't*. He pointed out that "research is not readily accessible- either physically or intellectually —to the potential users. Summaries of major studies appear in periodicals like *Education Week*, but the detailed results (usually written for other researchers in academic-speak) are usually available only in separate reports or in relatively low-circulation journals that do not reach those who most need to know."

Shkedi (1998), used a qualitative research study procedure on 47 teachers to explore their attitudes to research literature in order to discover how teachers use research findings, by using face-to face interviews to identify barriers in using research findings. The findings from this study suggested that very few teachers make use of research literature or research findings to expand professional knowledge, solve problems or meet the requirements of their job. Shkedi, (1998) then concluded that 'Teachers tend not to read professional literature, and when they do, they give preference to practical educational literature that can be applied directly to their teaching rather than research findings'. Teachers in the study argued that they did not use research literature because they perceived it to be irrelevant, unhelpful and too theoretical. The teachers claimed that they lacked time, did not trust the findings, and could not understand the language or make sense of the statistics. The research revealed that most teachers using research literature were doing so in the context of academic study, rather than to support their teaching and very teaching. Teachers also said that research literature was not available in their immediate surroundings.

Zeuli, (1994), researched on the way teachers utilize research findings. This study was carried out in Michigan in the United States with a convenience sample of 13 primary, middle and secondary school teachers, and it was aimed to find out how teachers read and respond to educational research findings. The researcher provided a summary of teachers' self-descriptions of how they read research, and how they believe their research knowledge influences their teaching. Zeuli, (1994), then concluded that,

- Teachers were more likely to use research findings when they are given examples of cases similar to their own teaching contexts'.
- Teachers respond more positively to credible concrete cases or examples, and need more sustained opportunities to link their understanding of research to their knowledge of teaching.
- Teachers only find research credible when it matches their personal experience.
- Some teachers believed research should exclusively identify strategies and techniques that could have a *direct* impact on their teaching.
- Teachers who believed that research could have an *indirect* impact on their teaching and had the potential to expand their understanding of teaching.
- Teachers were more concerned with the concepts and the claims the author proposed, and how the study's conclusions were supported by evidence.

Hamsley-Brown and Sharp (2002) found that Head teachers or Principals had a positive view of research and tended to use the findings in their decision making processes. Findings on teachers revealed that those teachers who used research literature were doing so in the context of academic study rather than to support their classroom instructional practices. This is to suggest that there is a high chance of barriers limiting education practioners especially teachers to appreciate and utilize research findings in the teaching and learning processes.

Saha *et al.* (1995) (also reported in Biddle & Saha, 2000) surveyed attitudes towards educational research among school principals from the US and Australia and a stratified sample of 81 American and 39 Australian primary and secondary school principals. The sample was selected using a grid to identify a variety of schools from the two countries, on the basis of type of school, level and type of community. The key issues addressed in the research were whether principals believed that research had any value in their day-to-day decisions and which factors might explain their attitudes to the value of educational research knowledge. The authors found that principals held a generally positive view of research, and tended to use research in their decision-making. They described the 'typical' principal in the study as judging research knowledge to be valuable. The 'typical' principal also argued that although research knowledge may be flawed, they believed it to be relevant. Nevertheless, they suggested that although principals' research knowledge was broad, it was shallow. They concluded that post-graduate training contributed towards raising a principal's regard for educational research knowledge even though he or she might consider such research to be problematic.

Cousins and Leithwood (1993) investigated the use of research information for school improvement. Survey questions focused on both the characteristics of the source of information and the context in which the use of research findings had taken place. The authors concluded that "the perceived

sophistication (how finely tuned it was to match local needs), value, relevance, and timeliness of the information had a positive impact on its use". The authors advocated social marketing as a way of encouraging school improvement, on the basis that dissemination should meet the needs of the users. According to the authors, "Head teachers are more likely to use research when the findings meet their information needs", and that research findings that are pertinent to current school management or teaching and learning issues, are more likely to be used. The authors also pointed out that there was the need for information associated with school improvement, through awareness raising research activities and utilization of research findings. From the above literature on the utilization of educational research findings, it would also be interesting to find out from Botswana Secondary School teachers on the barriers preventing them to use educational research findings within the school system.

4. METHODOLOGY

4.1. Research Type and Design

This study is quantitative survey design, determining barriers which inhibit the utilization of research findings within the educational system in Botswana.

4.2. Population and Sampling Procedure

The population for this study was all teachers teaching at the junior secondary schools in the South central region of Botswana. A total of two hundred (200) teachers were selected randomly from twenty (20) junior secondary schools in the South central region of Botswana (ten teachers per school) participated in the research study. Out of two hundred (200) teachers, only one hundred and fifty six (156) teachers completed the questionnaire. The responses of these teachers were analysed to determine the barriers inhibiting Junior Secondary School teachers' utilization of research findings within Botswana educational system.

5. Instrumentation

The questionnaire on **Barriers inhibiting utilization of research findings within Botswana educational system' c**onsisted of two sections A and B. In section A, the junior secondary school teachers were asked about their background information, with regards to their gender, teaching experience, qualification and area of subject specialization and section B consisted of thirty (30) closed ended questions in statements form, which was constructed based on literature on utilization of research findings by teachers. The junior secondary school teachers were asked to indicate their views on a four likert rating scale, (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). The items were pilot tested and experts reviewed the items for validity. For the reliability analysis, the internal consistency reliability coefficient, Cronbach's Alpha formula was computed for the items on the instrument (the questionnaire) and the value was 0.874. The respondents were assured that their identities would be kept confidential, as their names would not be written on the completed questionnaires and that the exercise was voluntary.

6. DATA PREPARATION AND DATA ANALYSIS

Questionnaires were numbered, coded and entered into the SPSS for analysis. Items in questionnaire were rated using the Likert scale. Respondents were asked to decide the extent to which they agreed with each items. Four categories were employed for each item and the usual description according to the four-point scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). A total of two hundred (200) teachers were selected randomly from twenty (20) junior secondary schools in the South central region of Botswana (ten teachers per school) out of which 156 responses teachers comprising of eighty nine (89) females and six seven (67) males were collected and analysed using factor analysis (available on the SPSS computer software package), to find the main constructs or barriers inhibiting the utilization of educational research findings among junior secondary school teachers in Botswana. The principal factor analysis with iteration was employed and varimax rotation method was also used. From the results of the factor analysis, eight (8) meaningful factors with eigen values greater than one emerged from the teachers' responses to the thirty (30) items on "Barriers inhibiting Utilization of Educational Research findings in Botswana Educational System", accounting for 95.645% of the total variance. Table 1 below; consist of the eight (8) barriers after varimax rotation with eigen values greater than 1.

7. Presentation and Discussion of Results

Table1. Eigen values of the 8 barriers after varimax rotation

Factors	Total	% of Variance	Cumulative %
1.	5.062	16.872	16.872
2.	4.377	14.590	31.462
3.	4.137	13.789	45.251
4.	3.830	12.766	58.017
5.	3.247	10.824	68.842
6.	2.889	9.629	78.471
7.	2.744	9.148	87.619
8.	2.408	8.026	95.645

New titles were given to the eight emerging barriers from the responses of the junior secondary school teachers in table 2.

Table2. The result of the factor loadings that emerged from the responses of teachers

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Items	loadings					
Factor 1: Lack of exposure to research findings.						
Item 4 Teachers feel inadequate to make use of research findings due to their limited knowledge of	.986					
research activities.						
<i>Item 12</i> Teachers belief that the literature reports conflicts with the research findings.	.986					
Item 20 Teachers do not feel they have enough authority to implement the research findings during	.978					
teaching procedure.						
<i>Item 28</i> Teachers do not feel adequately obliged to use research findings in the classroom.	.967					
Factor 2 Beliefs towards research findings.						
<i>Item 21</i> Teachers have a belief that research studies have methodological inadequacies.	.989					
Item 5 Teachers feel the benefits of changing practice will be minimal with the results of research	.989					
findings.						
<i>Item 13</i> Teachers are uncertain whether to believe the findings of any educational research.	.981					
<i>Item 29</i> Teachers feel that the conclusions drawn from the research are not justified.	.950					
Factor 3: Unwillingness to make use of research findings.						
<i>Item 11</i> Most teachers are unwilling to change or try new ideas based on the research findings.	.981					
<i>Item 19</i> The school facilities are inadequate for the implementation of research findings.	.979					
Item 27Teachers should only use research findings for critical decision making in the	.971					
classroom.						
Item 3 There is always insufficient time in teaching to implement new ideas from research	.961					
finding						
Factor 4: Perceptions on the benefits of research findings						
Item 2 Teachers see little benefit of the use of research findings.	.975					
Item 18 Teachers do not gain a lot of teaching experience through the use of research findings.	.973					
Item 26 Some teachers do make use of research findings to improve their teaching skills	.963					
Item 10 Research findings have no relevance to teachers' classroom practices.	.960					
Factor 5: Unawareness of research findings.	.900					
	076					
Item 9 Teachers perceive that research reports/ articles are not published in time for their use in the classroom	.976					
	0.00					
Item 1 Teachers do not see the value of research for teaching effectively in the classroom.	.969					
Item 25 Not all teachers use research findings to improve quality teaching and learning outcomes.	.961					
Item 17 Teachers are unaware of the research findings.						
Factor 6. Not well trained in research activities.	.947					
Item 22Teachers feel results of research findings are not generalizable to schools setting.						
Item 14 Teachers are uncertain whether to believe the results of research findings.	.972					
Item 30 Teachers do not understand the language or make sense of the statistics used to report	.963					
research findings.	.962					
Item 6 Many teachers do not feel capable of evaluating the quality of research findings.						
Factor 7. Research findings not mandatory in schools.	.950					
<i>Item 24</i> Other staff members are not supportive of implementation of research findings.						
<i>Item 16</i> Administrators in schools will not cooperate with implementation of research findings	.991					
<i>Item 8</i> Administrators will not allow implementation of the research findings.	.986					
Factor 8. The need for research experts in schools.	.985					
Item 23 Teachers do not believe that research findings should be useful in their daily practice.						
Item15 Teachers need adequate assistance to make adequate meaning of research findings.	.976					
Item 7 Teachers are always isolated from knowledgeable colleagues with whom to discuss	.963					
research.	.943					
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8. DISCUSSION OF RESULTS

8.1. Research Question 1

What are the barriers inhibiting the utilization of educational research findings within Botswana secondary school system?

From table 2, the emerging eight (8) barriers inhibiting the utilization of educational research findings according to Botswana Junior Secondary School teachers' responses indicated the following:

- Lack of exposure to research findings.
- Beliefs towards research findings
- Unwillingness to make use of research findings.
- Perceptions on the benefits of research findings
- Unawareness of research findings.
- Not well trained in research activities.
- Research findings are not mandatory in schools.
- The need for research experts in schools.

The results from this study are very closely related to results from earlier studies reporting the barriers inhibiting teachers utilising educational research findings:

- Cousins and Walker (2000) found a significant association between self-perceived ability and utilisation of research use by teachers.
- According to Williams and Coles (2007), teachers' attitudes vary from mild optimism to skepticism relating to the use of research findings.
- Zeuli (1994), specified that teachers only value research more if it matches with their personal professional experience.
- Saha et al, 1995). Teacher's research related competencies also influence the way they perceived and use research findings. These researchers specified that there should be commitment and teacher's individual willingness to make use of research findings.
- Teachers' indirect involvement with research process was also been recognised as a barrier to the utilisation of research findings. According to Cousins and Walker, (2000), teachers direct involvement with research process, help them to use research findings effectively.
- Williams and Coles (2007), found out that despite increased online access to research findings, accessibility continues to be an issue and one of the barriers in the utilisation of research findings by teachers.
- Everton et al., (2000) specified that teachers value research more if the findings tackle specific aspects of teaching.
- Ratcliffe et al., (2005), were of the opinion that teachers use research findings only if such findings can be directly applied to their teaching.

8.2. Research Question 2

Are there significant differences among Botswana junior secondary school teachers with respect to teachers' gender in relation to the barriers inhibiting the utilization of educational research?

The eight (8) barriers identified by factor analysis in table 2 were analysed using SPSS independent t-test, to find out if there were any significant differences with respect to the teachers' gender. It was found (table 3) below that there was no significant difference with respect to teachers' gender on the barriers inhibiting the utilization of educational research findings within Botswana secondary school system, since the p-values were higher than 0.05 for the identified eight (8) barriers in table 2. This means that the gender of a teacher has no significant effect on the barriers inhibiting the utilization of educational research findings among Botswana Junior Secondary School teachers.

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Table3. Results of SPSS independent t-test with respect to teachers' gender significance differences on the barriers inhibiting the utilization of educational research findings

Barriers on the utilization of		no	mean	Std.Dev	Std	t-value	df	Sig
research findings in schools.					Error			
Teachers' lack of exposure to	Male	87	10.828	3.971	.426	677	154	.500
research findings.	female	69	11.261	3.972	.478			
Teachers' beliefs towards	Male	87	11.081	3.378	.362	-1.009	154	.315
research findings.	female	69	11.652	3.682	.443			
Teachers' unwillingness to make	Male	87	10.977	3.757	.403	-1.475	154	.142
use of research findings.	female	69	11.869	3.749	.451			
Teachers' perceptions on the	Male	87	12.207	3.341	.358	-1.126	154	.262
benefits of research findings.	female	69	12.768	2.745	.330			
Teachers' unawareness of	Male	87	11.724	3.168	.312	-1.371	154	.172
research findings.	female	69	12.362	2.485	.299			
Teachers not well trained in	Male	87	11.540	.347	.347	415	154	.082
research activities.	female	69	11.783	.489	.489			
Research findings not mandatory	Male	87	7.506	2.524	.271	425	154	.672
in schools.	female	69	7.68	2.609	.314			
Teachers need research experts in	Male	87	9.368	2.024	.217	030	154	.976
schools.	female	69	9.377	1.619	.195			

P<0.05 for significance

Are there significant differences among Botswana junior secondary school teachers with respect to years of teaching experience in relation to the barriers inhibiting the utilization of educational research?

There were significant differences with respect to teachers' length of service in schools on the emerging eight (8) barriers inhibiting the utilization of educational research findings by Botswana Junior Secondary School teachers. The significant differences with respect to teachers' length of service in the utilization of research findings were as follows with p< 0.05 in table 4

- Teachers' unwillingness to make use of research findings. (.021***)
- Research findings not mandatory in schools.(.001***)

Table4. ANOVA on the emerging eight (8) barriers inhibiting the utilization of educational research findings

Teachers' lack of exposure to	Sum of squares	df	Mean	F	Sig
research findings.			Square		
Between Groups	12.940	3	4.313	.270	.847
Within Groups	2424.003	152	15.947		
Total	2436.942	155			
Teachers' beliefs towards research					
findings.					
Between Groups	16.081	3	5.360	.429	.733
Within Groups	1900.586	152	12.504		
Total	1916.667	155			
Teachers' unwillingness to make					
use of research findings.					
Between Groups	136.123	3	45.374	3.341	.021***
Within Groups	2064.313	152	13.581		
Total	2200.436	155			
Teachers' perceptions on the					
benefits of research findings.					
Between Groups	16.683	3	5.561	.576	.632
Within Groups	1468.003	152	9.658		
Total	1484.686	155			
Teachers' unawareness of research					
findings.					
Between Groups	18.870	3	6.290	.747	.526
Within Groups	1280.124	152	8.422		
Total	1298.994	155			

Teachers' not well trained in research activities.					
Between Groups	12.031	3	4.010	.303	.823
Within Groups	2013.578	152	13.247		
Total	2025.609	155			
Research findings not mandatory					
in schools.					
Between Groups	105.270	3	35.090	5.883	.001***
Within Groups	906.646	152	5.965		
Total	1011.917	155			
Teachers' need research experts in					
schools.					
Between Groups	8.481	3	2.827	.823	.483
Within Groups	521.955	152	3.434		
Total	530.436	155			

P < 0.05

9. CONCLUSIONS

On the basis of the foregoing findings, the following conclusions can be drawn:

- Most of the Junior Secondary School teachers in Botswana appear to lack the knowledge, exposure and awareness regarding the utilization of educational research findings.
- Many of the Junior Secondary School teachers in Botswana are unwilling to make use of educational research findings in the school system.
- Teachers in the Junior Secondary Schools were not well trained in research activities, and this is affecting their utilization of educational research findings.
- Many of the Junior Secondary School teachers in Botswana still need to change their beliefs and perceptions on the benefits of educational research findings for the school system.
- Since research findings are not mandatory in schools, most of the teachers are not interested in the utilization of educational research findings by researchers.

10. RECOMMENDATIONS

- Educational research findings should be utilized in the school system, because research helps to solve existing problems and challenges so the role of educational research is very vital in decision making processes in schools.
- Although educational research requires effort, time, and sometimes capital resources, the school system should allow teachers enough time and resources for research purposes.
- Teachers should be encouraged to contribute to knowledge through research activities.
- There should be awareness on the utilization of research findings in the educational system by Junior Secondary teachers in Botswana.
- There should be research mentoring in place in the educational system to improve research backgrounds of Junior Secondary School teachers in Botswana.
- Botswana educational system should provide research training, opportunities and workshops for teachers.

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