International Standard
Research Publishing

Contemporary Issues of Basic Education in Ghana; Principal Component Extractions of Swot Matrix for National Development

[1]Clement Ayarebilla Ali,
[2]Nixon Saba Adzifome &
[3]Asonaba Kofi Addison PhD
[1,2&3]*Department of Basic Education, University of Education, Winneba*

Abstract

The strengths, weaknesses, opportunities and threats matrix identified the critical contemporary and essential issues that confront policies and programmes of basic education in Ghana. We purposively sampled sixty-five teachers and elicited forty-three essential internal and external issues in the basic schools. The SPSS method of principal component extractions revealed that internal issues of good and neat pupils in structured mathematics classrooms enhanced teaching and learning but lack of communication with authorities, pupils' previous knowledge and poor fellow teacher support hindered teaching and learning. Externally, stakeholders' support to teachers, upgrading of teachers' knowledge and general popularity of the basic schools boosted teaching and learning, whereas poor quality of pupils enrolled to pursue the overloaded mathematics syllabus and competitions faced with faith-based and private basic schools in attracting good quality pupils inhibited teaching and learning. We therefore, recommended adoption of the matrix to prioritize, address, and accelerate national development.

Keywords: *Contemporary Issues; National Development; SWOT Matrix*

Background to the Study

The major topical contemporary issues discussed widely among the stakeholders in Ghana are access to education, quality of education, educational management and science, technology and mathematics. This explains why the interventions outlined in the first Ghana Poverty Reduction Strategy Policy Goals for ESP 2003-15 to quality, extend technical and vocational education, and provide equal opportunities for girls (Frank, Hofstad, Lenstra, Neerven,, Schilders, Stokman & Taelman, 2013; Ministry of Education, 2012; Akyeampong, Djangmah, Oduro, Seidu & Hunt, 2007). That is why this article used the *s*trengths, *w*eaknesses, *o*pportunities, and *t*hreats (SWOT) matrix to address the internal and external issues that affect basic school teaching and learning.

Statement of Problem

The contemporary issues that confront basic education in Ghana are mainly access, quality, affordability, and management. These issues arise from the various stakeholders, both within and outside the basic school environs. But unlike other social issues, education hinders almost everything in the society, and the teacher is a major key player. Mathematics and numeracy are driving forces that teachers use to determine the success of the basic school curriculum. It is therefore, incumbent to centre and extract these contemporary issues from basic school teachers to improve upon teaching, learning, and management. Unlike other exploratory designs that are most often biased in selecting the critical issues, either because there are no known methods or lack of knowledge of appropriate methods of extracting these issues. We apply and recommend the PCA extraction of the SWOT matrix because it is computer driven, unbiased, user-friendly, and simple. One requires only a catalogue of issues that best match teaching, learning, and management situations with coded questionnaires that are either open or closed ended responses.

The statistical package for social sciences (SPSS) software extracts the issues in varying forms and order for appropriate selections (Ali, 2014; Beaumont, 2012; Ghana Education Service, 2012; DEPED, 2010; Akyeampong, et. al., 2007).

Objectives of the Study

The objective of the study was to apply the PCA methods to extract twenty contemporary issues in basic education in Ghana. This study sort to use the SPSS software and apply the PCA methods to:
1. Select the dominant demographic features and identify their policy implications in the teaching and learning in basic schools in Ghana.
2. Extract twenty major contemporary issues, ten each of internal and external factors, which confront basic education in Ghana.

Research Questions

1. Which demographic feature was dominant in selecting twenty contemporary issues that impact on the teaching and learning in basic schools in Ghana?
2. What is the educational policy implication of each dominant demographic feature?

Hypotheses
1. H_{01}: Twenty contemporary issues are unrelated in the teaching and learning in Ghana.
2. H_{02}: Ten internal contemporary issues are unrelated in the teaching and learning process.
3. H_{03}: Ten external issues are unrelated in contemporary Ghana.

Theoretical and Conceptual Literature

Frank, et. al. (2013), Slovak Republic (2009), and Department of Education--DEPED (2010) explain the SWOT matrix as a structured planning tool used to evaluate the internal and external factors that confront an organization. The internal factors are strengths and weaknesses while the external are opportunities and threats. Strengths are factors that are likely to have positive effects, whereas weaknesses are factors that are likely to have negative effects on achieving the school's objectives. Opportunities are external factors that are likely to have positive effects, and threats are external factors and conditions that are likely to have negative effect on achieving the school's objectives.

The SWOT matrix can be carried out on text books, teaching resources, pupils, teachers and managements to specify the objectives and identify both favorable and unfavorable strategies of achieving the set objectives. In this article, we targeted the internal factors of enrolments, teaching resources, mathematical competencies, pupils-to-teacher ratios, teaching methodologies, level transitions, completion rates, absenteeism, and adult literacy rates. The external issues were popularity, assistance, staff development, competition, curriculum stress, motivation, and standards of pupils (-Frank, et. al., 2013; Packer, Allsop, Dvorak- Little, Stanley & Wirak, 2010; Education For All, 2007; University Strategic Goals and Priorities Committee-USGPC-2004; Yigit, Al-Ansary & Al-Najem, 2004).

Internal Issues of Basic Education

The internal strengths are increased access to basic education through improved public awareness and the use of capitation grants, complementary education and other non-formal opportunities for out-of-school children and adults, and community-school partnerships. The others were positive reputation in the external community, positive experience, and proactive partnerships. The rests were staff and student support schemes, communities' involvements, healthy and clean environments, and cultural performances (Packer, et. al., 2010; Education For All, 2007; USGPC, 2004; Yigit, Al-Ansary & Al-Najem, 2004).

The internal weaknesses were poor retention of pupils, committed teachers, increasingly inequitable distribution of education benefits, and poor management capacity. The others were operational bureaucracy, sluggish responsiveness to student needs, fiscal uncertainty, lack of pride of internal community, mismatch between research expectation and support, and high unequal workloads of staff. The rests were

inability to employ and retain qualified staff, student unpreparedness at examinations, lack of strong and pervasive presence of school community, limited resources for staff development, and highly competitive market for staff (Murray, 2014; Packer, et. al., 2010; Halifax Community College, 2009; Education For All, 2007; USGPC, 2004; Yigit, Al-Ansary & Al-Najem, 2004).

External Issues of Basic Education in Ghana
The external opportunities basic schools confront are p*olitical (*stability, levels of bureaucracy, and regulation/de-regulation trends), e*conomic (*economic growth, labour supply, levels of disposable income, and income distribution), s*ocio-cultural (popula*tion growth rate, age/gender profile, social taboos, and socio-cultural practices), laws (discrimination, employment, regulations, and international/national standards), and environmental (weather, climate, and climate change. These opportunities allow the basic schools to partner, expand, diversify, improve, and expand the schools' resources.

On the hand, the external threats are budget crises, students' demands, numerical versus qualitative achievements, public perceptions, large resource requirements, and official/unofficial absences of teachers and students. These threats provide vital information on lack self confidence, threat for punishment, fear of examinations, truancy, conflicts, and insecurity for stakeholders to predict situations and circumstances that might be encountered in future (Murray, 2014; Halifax Community College, 2009). Although Frank, et. al., (2013), and Packer, et. al., (2010) concede that SWOT analysis can lead to misrepresentations, self defenses, and misuses of information, we believe that when stakeholders apply the principal components collaboratively, the design and analysis can achieve its prime goals.

Kaiser-Meyer-Olkin Measure, Bartlett's Test of Sphericity and Communalities Extractions
Principal component analysis (PCA) has been explained as the method of reducing large datasets of correlated variables to smaller uncorrelated ones. The commonest outputs are Kaiser-Meyer-Olkin (KMO), Bartlett's test of sphericity, communalities, and explained variances. The KMO measures the degree of sample adequacy of the variables, whose value should lie between 0.5 and 0.6. Thus, a value below 0.5 is considered inadequate, and above 0.6 is very adequate for the SWOT matrix. The KMO value comes with the Bartlett's test of sphericity, which measures the independence of factors of the variables. A value less than 5% level of significance means that the extracted factors of the SWOT matrix are statistically significant. It is worthy to note that whenever the KMO value is adequate, the Bartlett's test also becomes statistically significant.

Coupled with the two are the communalities and total variance explained. The communalities measure the variabilities of the variables, shared with each other without measurement errors. The initial values are always 1 and have no statistical interpretations, but the other extractions should range between 60% and 70% to be

considered desirable for the SWOT matrix. The total variances combine nine columns--three of each of the eigenvalues, extraction sums and rotation sums. The first three columns show the initial eigenvalues, where the dominant ones are always greater than one, and have greater effects. Ideally, the dominant ones should account for more than 70%. The middle three columns show the extraction sums of squared loadings, and the dominant factors must account for the same percentage as their dominant eigenvalues. The last three columns display the rotation sums of squared loadings, where the dominant ones are normalized (Ali, 2014; Ofori & (Dampson, 2011; Beaumont, 2012).

Methodology
Permission was sought from the office of Effutu Municipal Education Directorate in the Central Region of Ghana, comprising head teachers/mistresses and individual teachers. Additionally, the researchers assured the teachers of anonymity of their responses. The design was exploratory, and extracted only twenty critical contemporary issues that confront the basic education sub-sector in Ghana. The researchers targeted the twenty commonest issues so that policy makers and stakeholders can comfortably and adequately address them (Murray, 2014; DEPED, 2010).

The study population was about one thousand, two hundred (1,200) basic school teachers in the Effutu Municipality in the 2014/2015 academic year. They were categorized into males and females, three types of managements, three levels of basic schools, three geographical zones of Effutu, and a minimum number of three teaching staff. The sample size was one hundred (100) across the five categorizations. However, sixty-five questionnaires were recovered and used for this study. The sample selection procedure was simple random sampling and selected five big basic schools whose teachers were at post at the times of our three-week duration of the data collection. The gender, management of schools, class of teaching, subject of teaching, and number of staff in a school were considered vital variables to the success of basic education in Ghana. The other aspects were categorized into strengths, weaknesses, opportunities and threats (DEPED, 2010; Akyeampong, et. al., 2007).

The study adopted the four-step health care model of (Ali, 2014; Harrison, 2010) to collect and analyse the data. Step 1 involved the collection and evaluation of data. Simple closed-ended questionnaires were designed with forty-three items to avoid verbose, monotonous and repeated responses from the teachers. The questionnaire items were divided into four sections. Section A focused on the demographic information of the teachers to explore the gender composition, management types, class of teaching, subjects of teachers, and number of staff in the schools. Sections B and C were constructed to generate data on the internal strengths and weaknesses of the basic schools while sections D and E focussed on the external opportunities and threats. All the sections were based on seven-point Thurstone scales. The highest attribute (1) indicated excellent while the least attribute (7) indicated a very terrible situation.

The good construct validity demanded clear directions, simple vocabulary, easy sentences, appropriate wordings, reasonable time limit, adequate coverage, devoid of halo effects and straight to the points. These ensured that the relevant information as well as the quality of the responses was explicitly and adequately understood and responded to, and the required information obtained within the shortest possible time. The methods of principal component extractions were adopted to ensure an acceptable KMO reliability coefficient of at least 55% at Bartlett's tests of significance at 5%. This process was devoid of longer time interval, group homogeneity, subjectivity, inconsistency, and optional items (Ali, 2014; Ali, Amihere, Adzifome, & Ngman-Wara, 2014; Beaumont, 2012; Ofori & Dampson, 2011).

In Step 2, twenty most accepted factors were extracted with factor communalities of at least 80%; ten each for internal and external. These factors are most critical and essential contemporary issues pertaining to basic education in Ghana. Step 3 involved the development of the SWOT matrix as total variance explained, and the conceptualization of the total variances explained tables for the internal and external analysis. The Chi-squared tests were used on five each of strengths, weaknesses, opportunities, and threats to justify their statistical significances to effective teaching and learning. Step 4 involved incorporating, justifying and concluding on the 'magic' of the SWOT matrix in carrying out educational policies, practice, and programmes (Ali, 2014; Harrison, 2010).

Results of research questions
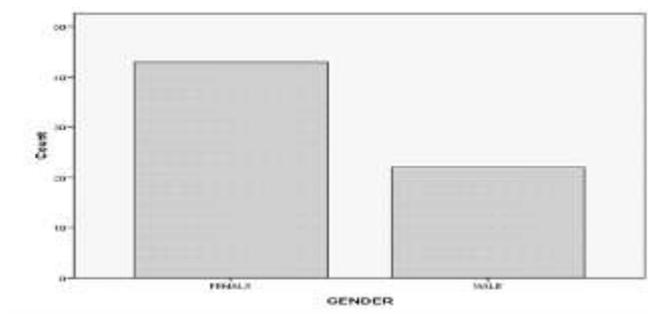
Figure 1: Teachers and gender composition in schools
Figure 1 shows the gender composition of teachers in the study area in the 2014/2015 academic year. It was observed that majority of the teachers were females. This gender balanced composition call for affirmative action for females' teaching and management skills in the basic schools. It also means many more females have been recruited and retained in the basic schools than males.
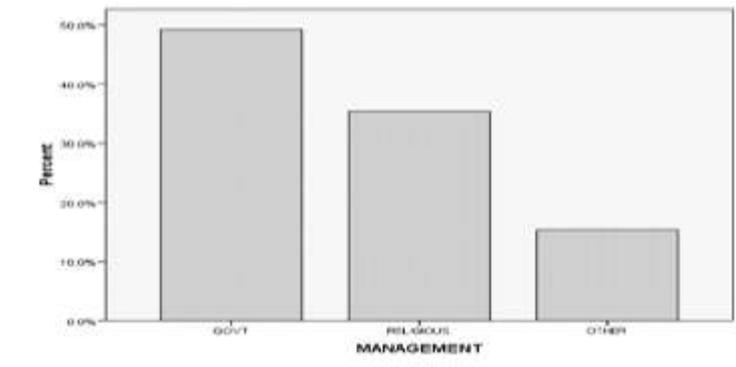
Figure 2: Teachers and management of schools

Figure 2 shows the management composition of teachers in the given period. It was observed that majority of the teachers were state managed, followed by religious or faith-based, and then other category of basic schools. Government being the largest employer of basic school teachers, should take the lead in adopting strategies to identify and fix the internal and external issues in the basic schools in Ghana. Thus, government should address the contemporary issues of access, quality, management, and science ahead of her other competitors.
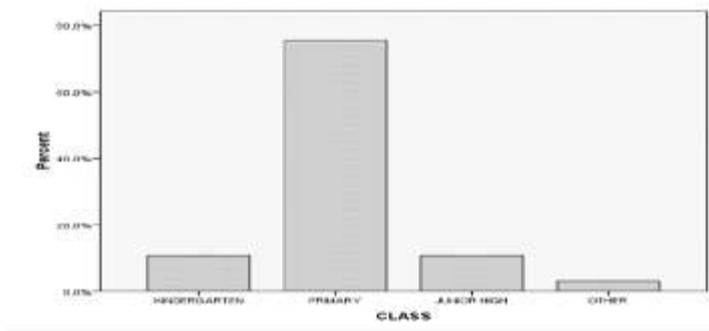
Figure 3: Teachers and class of teaching

Figure 3 shows the classes in the basic schools the teachers were teaching. We observed that majority of the teachers were in primary, and just a little over 10% were in the junior high and kindergarten classes. This means that the SWOT matrix targeted primary school teachers more than the other categories of basic level education in Ghana. Therefore, stakeholders should focus these fundamental issues of access, quality, and pedagogy in the primary schools.
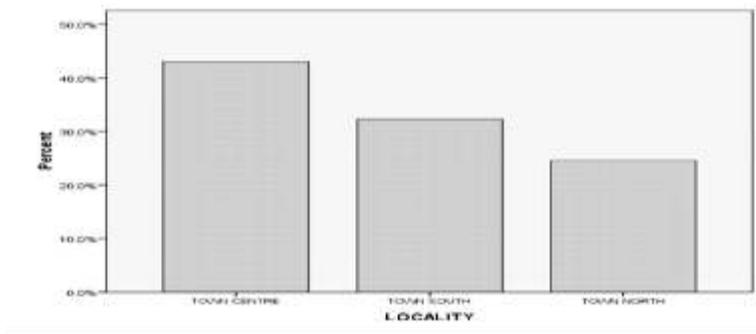
Figure 4: Teachers and locality of schools

Figure 4 shows the locations of the basic schools in the Effutu Municipal Directorate. It was observed that majority of the teachers work in the town centre, followed by the town south and town north respectively. Therefore, the quest by the Ghana Education Service to redistribute teachers to under-served areas should be pursued to address the topical issues of teacher performance, unemployment, pupil-teacher ratio, and school supervision in Ghana.
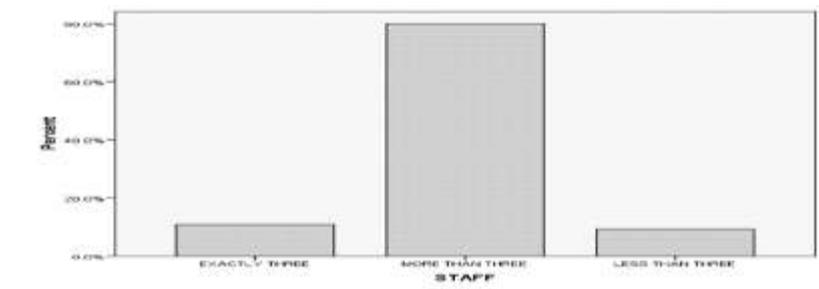
Figure 5: Teachers and number of staff of teaching

Figure 5 shows the minimum number of staff in the basic schools. It was observed that over 80% of the teachers work with more than three teachers in the basic schools. And in the same municipal directorate, some basic schools had far less than three teaching staff working in some of the basic schools. As noted in Figure 4, stakeholders should continuously and vigorously address the contemporary issues of urban teacher redistribution, posting or reposting or employing more teachers for rural areas, and adequate supervision of manpower directorate.

Results of hypotheses

Table 1: Strengths KMO, Bartlett's Test, and PCA of Communalities

KMO Measure of Sampling Adequacy		0.551
Bartlett's Test of Sphericity	Approx. Chi-Square	237.800
	Degree of freedom	45
	Sig.	0.000
Strengths	*Initial*	*Extraction*
Sufficient Pupils	1.000	0.881
Sufficient TLMs	1.000	0.718
Good Pupils	1.000	0.882
Good Maths Pupils	1.000	0.935
Structured Maths	1.000	0.901
Parent Support	1.000	0.752
Adequate Furniture	1.000	0.834
Spacious Playground	1.000	0.781
Conducive School	1.000	0.884
Neat Pupils	1.000	0.684

The Table 1 shows the tests of KMO and Bartlett's. The KMO overall value of 0.551 was more than the recommended 0.50 to perform principal component extractions. The Bartlett's test is also significant at 5% for about nine communalities of threats extracted from the basic school teachers in the Effutu Municipal District of Ghana. We have observed that the six extractions of the communalities range from 68% (neat pupils) to 95% (Good Maths pupils). This means all the components were very essential, apart from pupils being neat in class.

Table 2: Strengths of PCA Analysis of Total Variance Explained

Component Strengths	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Sufficient Pupils	3.197	31.966	31.966	3.197	31.966	31.966	2.358	23.581	23.581
Sufficient TLMs	1.806	18.060	50.026	1.806	18.060	50.026	1.856	18.559	42.140
Good Pupils	1.314	13.135	63.161	1.314	13.135	63.161	1.627	16.274	58.414
Good Maths Pupils	1.148	11.478	74.639	1.148	11.478	74.639	1.345	13.446	71.861
Structured Maths	0.787	7.873	82.512	0.787	7.873	82.512	1.065	10.652	82.512
Parent Support	0.667	6.675	89.187						
Adequate Furniture	0.410	4.102	93.289						
Spacious Playground	0.312	3.120	96.409						
Conducive School	0.191	1.913	98.322						
Neat Pupils	0.168	1.678	100.000						

Table 2 shows the total variances explained by the Eigenvalues. The first three columns show the initial Eigenvalues. We observed that the first five initial Eigenvalues accounted for about 83% of the variability and the rest made only 17%. The next three columns depict the extraction sums of squared loadings. Clearly, the first dominant factors accounted for the same 83%. The last three columns display the rotation sums of squared loadings. Here, again, the first five factors accounted for about 83%. This consistency means that even though all the strengths were important, about five were most critical.

Table 3: Strengths Chi-Squared Tests

Test	Structured maths	Conducive school	Good maths pupils	Good pupils	Sufficient pupils
Chi-Square	34.046	25.231	60.154	52.000	21.677
Degree of freedom	5	4	4	4	5
Asymp. Sig.	0.000	0.000	0.000	0.000	0.001

The Table 3 shows the Chi-square tests of significance of the strengths. At 5%, the P-values were generally smaller than 5% level of significance. This means it was unlikely that their relations were due to random sampling. Therefore, these five strengths were related, and that stakeholders should devise policies and innovations to maximize their impacts on basic education in Ghana.

Table 4: Weaknesses KMO, Bartlett's Test, and PCA of Communalities

KMO Measure of Sampling Adequacy		0.851
Bartlett's Test of Sphericity	Approx. Chi-Square	801.391
	Degree of freedom	105
	Sig.	0.000
Weaknesses	*Initial*	*Extraction*
Low Completion	1.000	0.872
Inappropriate Methods	1.000	0.883
Pupils Lack RPK	1.000	0.893
Difficult Assessment	1.000	0.799
Not Teacher Support	1.000	0.890
Few Admin Staff	1.000	0.868
Indiscipline Pupils	1.000	0.829
Not Adding Furniture	1.000	0.858
Authorities Aware	1.000	0.900
Minimized Problems	1.000	0.805

The Table 4 shows the tests of KMO, Bartlett's and communalities of the internal weaknesses. The KMO overall value of 0.872 was very strong to perform the principal component extractions. The Bartlett's test was also significant at 5% for all communalities of weaknesses extracted from the basic school teachers in the Effutu Municipal District of Ghana. This means most components were very essential weaknesses, and must be minimized to boost basic school teaching and learning.

Table 5: Weaknesses PCA of Total Variance Explained

Component Weaknesses	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Low Completion	8.251	55.010	55.010	8.25	55.010	55.010	3.579	23.857	23.857
Low Attendance	1.662	11.082	66.092	1.66	11.082	66.092	3.482	23.212	47.069
Inappropriate Methods	1.061	7.072	73.164	1.06	7.072	73.164	2.280	15.200	62.268
Pupils Lack RPK	0.769	5.125	78.289	0.769	5.125	78.289	1.691	11.274	73.543
Pupils Not Dependent	0.696	4.638	82.927	0.696	4.638	82.927	1.408	9.384	82.927
Inappropriate Assessment	0.642	4.277	87.204						
Difficult Assessment	0.425	2.832	90.036						
Not Teacher Support	0.364	2.428	92.464						
Few Admin Staff	0.317	2.111	94.575						
Indiscipline Pupils	0.249	1.661	96.236						
Inexpansible Classrooms	0.168	1.122	97.358						
Not Adding Furniture	0.141	0.942	98.299						
Authorities Aware	0.100	0.664	98.963						
Long Communication	0.097	0.650	99.613						
Minimized Problems	0.058	0.387	100.000						

Table 5 shows the total variances explained by the Eigenvalues. The first three columns show three dominant initial eigenvalues, which accounted for about 73%, and all five accounted for about 83%. These were normalized to about 62%, and 83% respectively. This means that even though all the five strengths were important, about three were most critical.

Table 6: Weaknesses Chi-Squared Test Statistics

Test	Authorities unaware	No teacher support	Pupils lack RPK	Low completion	Inappropriate methods
Chi-Square	15.954	31.615	52.062	46.031	23.738
Degree of freedom	5	7	6	6	7
Asymp. Sig.	0.007	0.000	0.000	0.000	0.001

The Table 6 shows the Chi-square tests of significance of the weaknesses. At 5%, the P-values were generally significant. This means the five weaknesses must be tackled by stakeholders to help boost basic education in Ghana.

Table 7: Opportunities KMO, Bartlett's Test, and PCA of Communalities

KMO Measure of Sampling Adequacy		0.864
Bartlett's Test of Sphericity	Approx. Chi-Square	318.924
	Degree of freedom	21
	Sig.	0.000
Component Opportunities	*Initial*	*Extraction*
Popular School	1.000	0.978
Stakeholder Support	1.000	1.000
Attend Workshops	1.000	0.987
Teacher Assistance	1.000	0.997
New Technologies Help	1.000	0.926
Teaching And Studying	1.000	0.936
Accepting Methodologies	1.000	0.872

The Table 7 shows the KMO, Bartlett's and communalities of the external opportunities explored. The KMO overall value of 0.864 was very strong to perform the PCA extractions, as confirmed by the Bartlett's statistically significance test at 5% for all communalities extracted. Even though all the components were very essential, it was revealed that stakeholder support was a highly critical opportunity for every basic school teacher.

Table 8: Opportunities PCA Analysis of Total Variance Explained

Component Opportunities	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Popular School	4.571	65.300	65.300	4.571	65.300	65.300	2.298	32.835	32.835
Stakeholder Support	0.948	13.544	78.844	0.948	13.544	78.844	1.176	16.805	49.640
Attend Workshops	0.482	6.881	85.725	0.482	6.881	85.725	1.091	15.582	65.223
Teacher Assistance	0.428	6.112	91.837	0.428	6.112	91.837	1.082	15.452	80.674
New Technologies	0.267	3.818	95.655	0.267	3.818	95.655	1.049	14.981	95.655
Teaching and Studying	0.183	2.620	98.275						
Accepting Methodologies	0.121	1.725	100.000						

Table 8 shows the total variances of opportunities explained by the Eigenvalues. The first three columns show one dominant initial Eigenvalue, which accounted for about 65% but was normalized to 32% in the rotation sums of squared loadings, even though five opportunities accounted for about 96%. This confirms all the opportunities were very important determinants of basic education in Ghana.

Table 9: Opportunities Chi-Squared Test Statistics

Test	Stakeholder support	Teacher assistance	Attend workshops	Popular school	Teaching and studying
Chi-Square	30.738	28.369	47.123	47.154	42.800
Degree of freedom	6	6	7	5	6
Asymp. Sig.	0.000	0.000	0.000	0.000	0.000

The Table 9 shows the Chi-square tests of significance of the opportunities. At 5%, the P-values were generally statistically significant to mean that all the opportunities must be exploited and sustained by stakeholders for successful implementation and execution of policies and programmes for basic education in Ghana.

Table 10: Threats KMO, Bartlett's Test, and PCA of Communalities

KMO Measure of Sampling Adequacy		0.783
Bartlett's Test of Sphericity	Approx. Chi-Square	189.226
	Degree of freedom	15
	Sig.	0.000
Component threats	*Initial*	*Extraction*
Much Competition	1.000	0.964
Overloaded Math	1.000	0.999
Difficult Enrolling	1.000	0.963
Lack Math Interest	1.000	0.933
Lack Math Profession	1.000	0.944
Poor Quality Pupils	1.000	0.999

The Table 10 shows the KMO, Bartlett's and communalities of the external threats explored. The KMO overall value of 0.783 was strong to perform the PCA extractions at Bartlett's test's of sphericity at 5% level of significance. Here, again all the components were very critical. For instance, the least threat (Maths interest) accounted for about 93%, and the worst (poor quality pupils) accounted for 99% in the basic schools. Therefore, stakeholders must devise more stringent measures to address the dwindling fortunes of basic schools in the globally competitive environment.

Table 11: Threats PCA Analysis of Total Variance Explained

Component threats	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Much Competition	3.659	60.976	60.976	3.659	60.976	60.976	1.605	26.750	26.750
Overloaded Math	0.762	12.693	73.668	0.762	12.693	73.668	1.189	19.823	46.573
Difficult Enrolling	0.649	10.815	84.483	0.649	10.815	84.483	1.092	18.193	64.766
Lack Math Interest	0.455	7.576	92.059	0.455	7.576	92.059	1.029	17.155	81.921
Lack Math Profession	0.278	4.633	96.693	0.278	4.633	96.693	.886	14.772	96.693
Poor Quality Pupils	0.198	3.307	100.000						

Table 11 shows the total variances of threats explained by the Eigenvalues. The first three columns show one dominant initial Eigenvalue, which accounted for about 61% but was normalized to 27% in the rotation sums of squared loadings, even though five threats accounted for about 97%. This shows that all the threats have detrimental consequences to basic education in Ghana, and must be assiduously checked.

Table 12: Threats Chi-Squared Tests

Test	Overloaded maths	Poor Quality Pupils	Much Competition	Difficult Enrolling	Lack math profession
Chi-Square	36.769	24.262	48.308	20.385	22.600
Degree of freedom	4	5	4	5	5
Asymp. Sig.	0.000	0.000	0.000	0.001	0.000

The Table 9 shows the Chi-square tests of significance of the threats. At 5%, the P-values were generally statistically significant. This means all the threats must be checked, and new policies and programmes must be implemented to arrest these five factors that have almost brought down the success of basic education in Ghana.

Conclusion and Recommendations
The demographic information shows that many more female teachers were recruited into the public primary schools in the urban centres. It is therefore, incumbent for gender activists and stakeholders to inculcate the SWOT matrix into gender education and training programmes. We recommend that policy makers should devise, revise and implement policies and programmes that would encourage female teachers in the basic schools to accept posting to the rural under-served areas without tampering with their basic rights.

The tests of KMO, Bartlett's sphericity, and communalities all show statistically significance values at 5%. The total variances showed that the strengths, weaknesses, opportunities and threats had generally higher significances (explained more than 80%). However, the strengths and weaknesses (internal were generally lower than the

opportunities and threats (external). Therefore, stakeholders need to implement policies and programmes that would address the issues of over-dependence of basic schools on external factors and resources.

Furthermore, the most influential factors in each category are good mathematics pupils (strength), weakness of communication to authorities, opportunity of external donor support to teachers, and overloaded mathematics curriculum. We recommend that, as basic schools enrol good pupils, efforts must be made to secure faster channels of communication, and as external resources support schools, stakeholders must endeavour to lessen the burden of the overloaded Mathematics curriculum.

The use of SWOT matrix was very unfamiliar to many teachers who completed the questionnaires. We suggest that, the Ministry of Education of Ghana should establish a SWOT matrix education and implementation committee to draft a training programme for all basic schools. The knowledge of SWOT should target the key indicators of basic education, with the purpose of safeguarding fundamental strengths and opportunities, and protecting against the negative impacts of weaknesses and threats.

Our observations showed that many teachers never do strategic planning in their schools. Therefore, stakeholders should formulate action lines for the basic education teachers, and set measurable milestones for student enrolments, teacher training, funding sources, gender participation, and outreach programmes. This will ensure effective monitoring, improve performances, and market the dwindling images of state-owned basic schools in Ghana.

References

Akyeampong, K., Djangmah, J., Oduro, A., Seidu, A. & Hunt, F. (2007), *Access to Basic Education in Ghana: The Evidence and the Issues*. Project Report. Consortium for the Research and Educational Access, Transition and Equity (CREATE). Falmer, UK and Winneba, Ghana.

Ali, C. A. (2014), Application of Principal Component Analysis in Monitoring Educational Prospects in Mathematics Related Careers in the Upper East Region of Ghana. *Education and Science Journal of Policy Review and Curriculum Development (ESJPRCD), 4 (1) January, 2014.*

Ali, C. A., Amihere, A.K., Adzifome, N.S. & Ngman-Wara, E.I.D. (2014), Introduction to Educational Research Methods Assessment and Statistics for Diploma and Degree Students. Winneba: Payless Ltd.

Beaumont, R. (2012), An introduction to Principal Component Analysis and Factor Analysis Using SPSS 19 and R (psychpackage).*www.floppybunny.org/robin/web/virtualclassroom/stats/statistics2/pca1.pdf].*

DEPED Educational Facilities Manual (2010), *Revised Edition of the 2007 Handbook on Educational Facilities - Integrating Disaster Risk Reduction in School Construction*. Pasig City: Physical Facilities and Schools' Engineering Division Office of Planning Service Department of Education.

Education for All (2007), *A human rights-based approach to education for All,* a framework for the realization of children's right to education and rights within education. New York: United Nations children's fund/United Nations educational, scientific and cultural organization.

Frank, J., Hofstad, R., Lenstra, J.K., Neerven, J., Schilders, W., Stokman, J. & Taelman, L. (2013), Vision Document 2025--*formulas for Insight and innovation, mathematical sciences in the Netherlands.* Amsterdam: Platform Wiskunde Nederland

Halifax Community College (2009), Strengths, Weaknesses, Opportunities, and Threats (S.W.O.T.) Analysis. Halifax Community College: *Office of the Institutional Effectiveness (11-12 / 2009).* Halifax Community College.

Harrison, J.P. (2010), *Essentials of Strategic Planning in Healthcare--Chapter 5 Strategic Planning and Swot Analysis.* Health Administration Press.

Ministry of Education (2012), *Education Strategic Plan 2010 to 2020 Volume 1 Policies, strategies, delivery, Finance.* Accra: Government of Ghana.

Murray, B. (2014), *A SWOT analysis of the teaching process of Math and Science at Worcester's North high school.* Worcester Polytechnic Institute: U.K.

Ofori, R. & Dampson, D.G. (2011). *Research Methods and Statistics using SPSS.* Kumasi: Payless Publications Ltd, pp247-272.

Packer, S., Allsop, T., Dvorak- Little, E., Stanley, T.P., & Wirak, A. (2010), *The Education Sector Analysis Team.* Kabul Jawsa: Adam Smith International.

Slovak Republic (2009), *SWOT analysis on the national LLL strategies, the status of implementation processes and perspectives of the national Lifelong Learning strategy processes.* Education, Culture, and Lifelong Learning Programme of the European Union: University Strategic Goals and Priorities Committee (USGPC-2004). Strategic Planning SWOT Analysis. California state University: Stanislaus.

Yigit, A.S., Al-Ansary, M.D. & Al-Najem, N.N. (2004), *Swot Analysis and Strategic Planning as an Effective Tool for Improving Engineering Education.* Kuwait: Kuwait University College of Engineering and Petroleum.