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Rate and Trends of Academic Performance Index and Level of Subject Satisfactory Outcomes

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Abstract
The acquisition of numeracy and literacy skills is a condition for better life and an important indicator to human development index. However where society academic performance outcomes becomes unsatisfactory, parents becomes disoriented and hence it becomes a concern. The study focused on rate and trends of academic performance index at secondary level. The descriptive and causal comparative designs were used in this study. The sample of the study comprised 85 head teachers', 765 teachers', 3349 students and one DEO. Questionnaires' and interview guides were used. The study showed that trend of academic performance index was fluctuating while for any academic year only a paltry 5 percent gained direct entry to university, 30 percent had to look for options in parallel programs while majority relied on other options to further their studies. Further observation indicate that mathematics had very unsatisfactory outcomes, sciences and languages had unsatisfactory performance while art based subjects had features of satisfactory performance and hence the system delivering secondary education is technically inefficient. The implication is that subjects meant to lead the country into industrialization were worst performed hence vision 2030 may not be achieved. It was found that Poor performance was as a result of inability of teachers to complete syllabus.
Keywords: Academic Performance Index, Impact, efficiency, curriculum, syllabus

1. Introduction

In most Sub-Saharan Africa, parents are an increasingly important source of funding for secondary education. They pay tuition and other fees to private and public schools hire private tutors, purchase books, supplies and uniforms and provide for formal or informal boarding. Although the public expenditure has been increasing, examination success rates are much lower than in Europe and OECD countries. Poor and rural students are disadvantaged by their inadequate academic preparation, unfamiliarity with examination problems, and inability to influence the process with illicit means (Verspoor, 2008).

Although research has shown that rate of returns to secondary education which stands at 17.2 percent has surpassed that of primary education (7.9 percent) in importance, still, majority of students drop out of secondary education cycle (Kimalu et al., 2002). It is argued that even those who complete secondary education may fail to attain basic functional literacy and may not proceed to university and tertiary colleges (UNESCO, 2005).

According to KNEC (2007), analysis of the KCSE subjects reveal that the mean performance of mathematics and sciences has been between 16 – 43 percent and therefore below average. The performance in languages differs as Kiswahili registers a mean performance of between 41 – 53 percent while in English the performance has been between 30 – 40 percent. Indicating that, Kiswahili was better performing than English. At the District level, for example Siaya district, the situation may be similar or worse.

Although the current national transition rate from secondary to university stands at 26 percent, the actual admission has been low at below 10 percent every academic year at district level. This depressing reading is notwithstanding that a lot of resources is being channeled to secondary education. This is perhaps why parents who are vested with the responsibilities of providing school facilities such as physical structures, textbooks, equipment, and also who pay fees according to agents demand are questioning how the system currently delivers secondary education. They are of the view that teachers' and various government agents ought to perform better at their present level of training and that the poor results in secondary education and especially in relationship to resources allocated to it is a concern.

The objectives of the study were:

1. To analyze academic performance index with the view of establishing the trends
2. To establish the rates at which the academic performance index has been changing.
3. To determine the level of subject satisfactory outcomes

2. Methodology

This study adopted descriptive (survey) and causal-comparative (ex-post facto) designs. Descriptive (survey) research describe systematically the facts and characteristics of a given population or area of interest, factually and accurately. Causal comparative research design is "ex-post facto" in nature, which means the data is collected after all the events of interest have occurred. The investigator then takes one or more effects (dependent variable) and examines the data by going back through time, seeking out causes, relationships, and their meanings. The study was carried out in Siaya district. Study population comprised 85 head teachers', 749 teachers', 3,210 form 4 students, and one DEO. Stratified, systematic and purposive sampling methods were used. Stratified sampling is a variation of simple random sampling and according to Burns (2000), stratified sampling helps to reduce the sampling error that may otherwise be there as a results of simple random sampling. Systematic sampling was used in the selected schools to determine the teachers and students who would be given questionnaires and who would participate in the interview. In this regard, the researcher selected every 5th name from the registers to yield the approximate number required. The researcher developed questionnaires and semi-structured interview schedules for the purpose of collecting data.

3. Research Findings and Discussion

3.1 Trend of Academic Performance Index

The trend of academic performance in the district can inform the education stakeholders whether resources being injected in secondary education are yielding much needed results. Table 1 show the mean performance index from 1997 to 2007 in Siaya District.

Table 1: Mean performance index, Siaya District

year	entry	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	X	Y	INDEX
1997	3276	1	32	87	173	315	411	560	548	541	353	123	4	32	2	5.574
1998	3638	4	33	81	192	339	479	625	669	639	422	134	3	18	0	5.581
1999	2404	0	15	46	99	199	305	376	485	425	326	106	2	20	0	4.6801
2000	2675	0	29	79	155	271	374	490	510	431	271	61	0	14	0	5.4986
2001	2739	7	30	88	137	241	350	476	525	453	320	97	4	11	0	5.4605
2002	2604	1	34	67	143	245	337	400	454	449	330	156	11	8	2	4.1993
2003	2742	1	62	100	158	274	448	420	458	495	318	84	4	15	0	5.1918
2004	2839	2	32	115	174	330	405	445	493	486	262	80	2	10	0	5.8719
2005	3301	8	61	143	239	336	457	586	540	465	317	119	4	13	7	5.9548
2006	3095	10	86	142	203	330	435	469	498	449	302	123	7	14	0	5.9685
2007	3489	5	50	149	287	411	479	484	498	522	381	132	8	22	5	5.92

Source: Authors' Derivation.

The table shows that the mean performance index dropped in 1999 to 4.680 from 5.581 in 1998. The performance also dropped to 4.199 in 2002 an all time low from 5.460 in 2001. The district posted best mean of 5.968 in 2006. Figure 1 shows the trend of academic performance in Siaya District from 1997 to 2007. The figure indicates the lowest points at 4.1993 in 2002 and the highest point at 5.9685 in 2006. Overall assessment shows that the trend of performance is fluctuating. This means that performance can be good or bad depending on the institutions where the student sits for the examination.

3.2 Rate of Mean Performance Grade

Table 2 shows the performance of students in the district according to various grades and the percentages of achieved grade in the district. For direct entry to university, the student must be able to achieve grades A to B+ often termed as quality grade. Grades B to C+ allows students to join university through self sponsorship or parallel program. Grades C to E allows student to find alternative means of furthering studies through various programs initiated by the government.

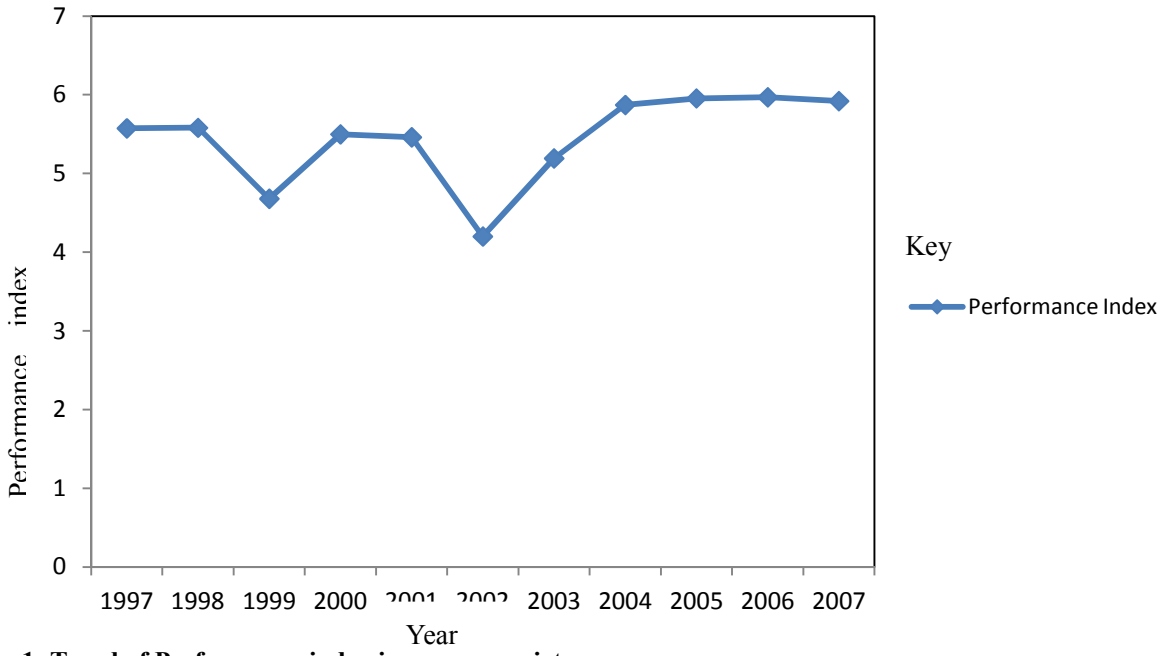

Figure 1: Trend of Performance index in Siaya District

Table 2: Students by Academic Performance and Grade

year	Students	A to B+		B to C+		C to D+		D to E		X to Y	
		total	%	total	%	total	%	total	%	total	%
2007	3489	204	5	117	33.7	1504	43.1	521	14.9	27	0.7
2006	3095	238	7.6	968	31.3	1416	46	432	14	14	0.45
2005	3301	212	6.4	1032	31.3	1591	48	440	13	20	0.35
2004	2839	149	5.2	909	32	1424	50	344	12	10	0.54
2003	2742	163	6	880	32	1373	50	406	15	15	0.38
2002	2604	102	4	725	28	1303	50	497	19	10	0.40
2001	2739	125	4.5	728	26	1454	53	421	15	11	0.52
2000	2675	108	4	800	30	1431	53	332	12.4	14	0.8
1999	2404	60	2.4	603	25	1286	53	434	17.6	20	0.5
1998	3638	118	3.2	1010	28	1933	53	559	15	18	0.5
1997	3276	120	3.6	899	27	1649	50	480	14	34	0.1
	Average		4.7		29.5		49.7		14.7		5.24

Authors' Derivation

The general observation from the table is that for the 11 year of analysis, the performance rate of getting grade A to B+ was 4.7 percent, B to C + was 29.48 percent, C to D+ was 49.7 percent and D to E was 14.7 percent. Two implications emerge:

1. That for any particular year, only a paltry 5 percent would get very satisfactory outcomes, 30percent satisfactory outcome, 49.7 percent unsatisfactory outcomes, while 14.7 percent very unsatisfactory outcomes.
2. That only a paltry 5 percent gain direct entry to university every year, 30 percent had to look for options in parallel programs or in other tertiary institutions, while the majority 49.7 percent relied on social, political or contextual factors to further their studies.

On average, the performance index for the period of the study was 5.46 which is equivalent to grade C. This implies that most students were not eligible to enter university since the required minimum entry grade is C+.

3.3 Level of Subject Satisfactory Performance

Teachers', Principals and parents judge educational success in terms of results. Using KNEC (2007) criterion Table 3, satisfactory level of performance can be determined for each subject. In this study, compulsory subjects (English, Kiswahili, Math's), three sciences (biology, physics, chemistry) and three humanities (history, geography and C.R.E) are examined. Table 4 shows mean grade per subject and Figure 2 show graphical representation of performance per subject.

Table 3 : Grading System

Clusters	grades	Level of Satisfactory
12 – 10	A, A-, B+	Very satisfactory
9 – 7	B, B-, C+	Satisfactory
6 – 4	C, C-, D+	Unsatisfactory
3 – 1	D, D-, E	Very unsatisfactory

Source: KNEC (2007).

Table 4: Mean Grade per Subject from 1999 to 2007

Subject/year	2007	2006	2005	2004	2003	2002	2001	2000	1999
English	6.16	6.14	5.86	4.17	5.30	4.46	5.16	4.28	3.94
Kiswahili	5.95	5.77	5.23	4.72	6.21	4.87	5.36	5.22	4.11
Maths	3.98	3.72	2.92	3.09	3.97	3.03	3.08	4.27	2.02
Biology	5.76	5.52	5.07	5.57	5.6	5.04	5.17	4.33	5.25
Physics	6.18	6.13	5.17	4.92	5.55	4.13	4.24	3.79	3.66
Chemistry	4.67	4.96	4.16	4.42	4.58	3.54	3.66	4.11	3.73
History	6.9	7.24	6.74	5.32	6.96	6.32	6.45	5.6	5.68
Geography	6.38	6.62	5.71	6.81	5.56	5.01	4.57	4.3	4.04
C.R.E	7.75	8.47	7.58	7.24	7.88	7.63	7.10	6.85	6.57

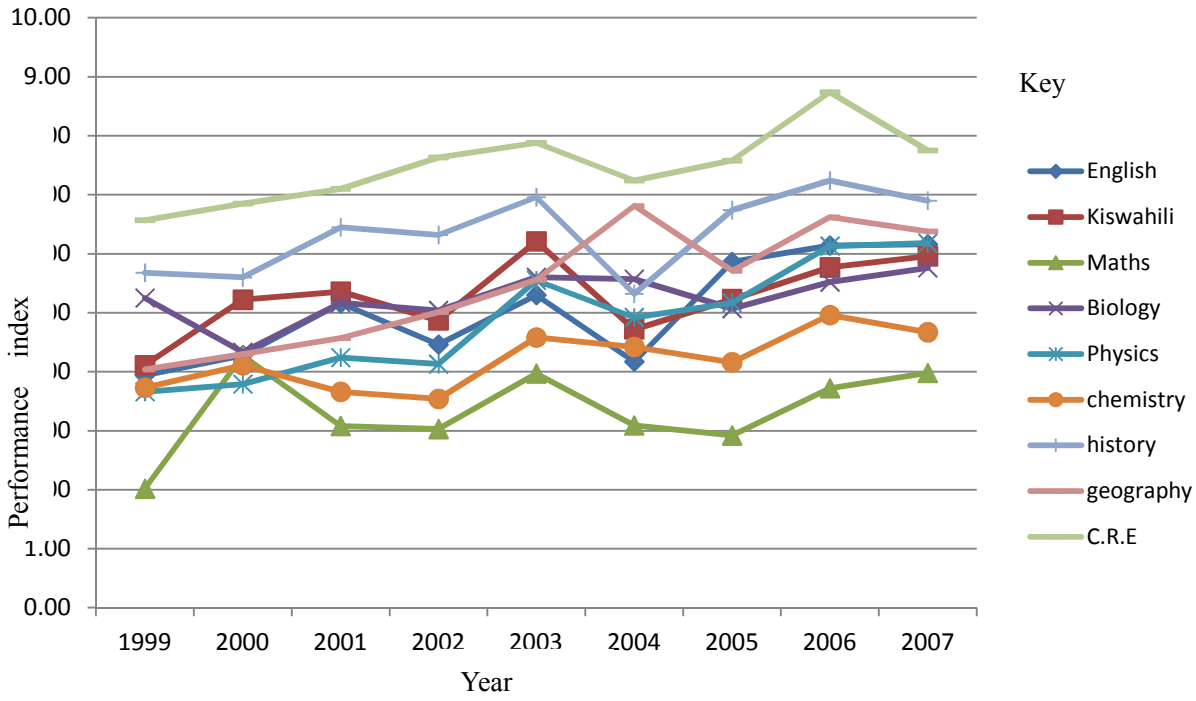

Figure 2: Line Graph of Subject Mean Performance index

Performance of biology has been fluctuating with elasticity being 5.83 with a mean grade C- and therefore unsatisfactory. Performance in Physics was fluctuating. The curve shows a general upward swing. The elasticity of performance was 4.86. This implies that the mean grade was D+ and hence unsatisfactory. Performance of English also fluctuated with elasticity being 5.05 and the mean grade was C- and therefore the performance was unsatisfactory. Performance in Kiswahili was fluctuating and the elasticity of performance was 5.27 and the mean grade was C- and therefore performance was unsatisfactory. The performance in mathematics was fluctuating, elasticity of performance in the period 1997 to 2007 was 3.34 which implies that the mean grade was D and therefore very unsatisfactory. Performance in chemistry was fluctuating and the elasticity of performance was 4.20 and mean grade was D+ and therefore unsatisfactory. The performance of geography illustrates an upward trend with elasticity of performance at 5.42 and mean grade is C- and therefore unsatisfactory. The performance in History was fluctuating with elasticity of 6.35 and the mean grade was C and therefore unsatisfactory. The performance in C.R.E illustrates an upward trend, the elasticity of performance in the period 1997 to 2007 was 7.45, the mean grade was C+ and therefore satisfactory.

In summary, the performance in languages and sciences was unsatisfactory, performance in mathematics was very unsatisfactory, while in humanities performance showed a feature of satisfactory performance. The performance at the end of every year is as follows: English C-, Kiswahili C-, Mathematics D, Biology C-, Physics D+, Chemistry D+, History C, Geography C- and C.R.E C+. By implication the main subjects that are necessary for the implementation of vision 2030 are lagging behind in terms of performance and these are English, Kiswahili for social pillar while Mathematics, Biology, physics and Chemistry for technological development. Therefore, the district may lag behind in development.

3.4 Sources of Poor Performance in the District from 1997 to 2007

Table 5 shows sources of poor performance identified in the district. Poor performance is largely as a results of low syllabus coverage. Other sources such as weak curriculum implementation, lack of properly conducted subject panels, effects of HIV/ AIDs, lack of inspection, low networking, lack of seminars for teachers', fee problem, teachers strike, inadequate facilities, problems with maths and sciences play a role but most significantly is low syllabus coverage.

Table 5: Sources of Poor Performance in Siaya District

Sources of poor performance	Cited in the year	percent
Low syllabus coverage	1997,1999,2001,2002,2005	20
Understaffing	1997,1998,2002	12
Private schools failed to click	1997,1998,1999	12
Week curriculum implementation	1998	4
Lack of properly conducted subject panels	1998,2001	8
effects of HIV /AIDS and orphans	1999	4
lack of inspection	2001,2004	8
networking of schools low	2001,2004,2005	12
Lack of seminars and workshops	2001	4
Fee problem	2002	4
Teachers' strike	2002	4
Inadequate facilities	2002	4
Problems with maths and sciences	2004	4

Sources: Authors conception

3.5 Time – on – Task

Teachers' spend less time on all teaching related activities than stipulated by policies (on average 362 hours per annum as compared to 672 hours). Secondly, of all of the time spent, they spend less on actual teaching (instead of the expected percentage range between 64 and 79 percent, they spend 54 percent of a 234–hour per week). The teaching and working time diminish as the week progresses. Also, across the sampled schools, time-on-task is a major constraint on effort to improve learning. Table 6 shows the time-on–task basis of the sampled schools.

Table 6: Time -on-Task

week	**activities**	**Actual learning**
1	Exams (opening on Tuesday or Wednesday)	None
2	Exams (staff meeting, cleanings)	None
3	Teaching	Actual teaching and learning
4	Teaching	Actual teaching and learning
5	Teaching	Actual teaching and learning
6	Cats (second exams)	None
7	Cats (ends on Thursday, then half term)	None
8	Teaching	Actual teaching and learning
9	Teaching	Actual teaching and learning
10	Teaching	Actual teaching and learning
11	Exams	None
12	Exams	None
13	Closing (Issuing of report form)	None

In overall, very little time is spend on actual learning activities in secondary schools. Time-on-task seems to be significantly reduced for a number of different reasons: (a) the first two weeks are utilized for staff meeting and school routine programs and continuous assessments (CATs); (b) week 6/7 was being used for second CATs and half term; and (c) last two weeks were being used for examination and closing. The implication was that effective teaching and learning take approximately only 6 weeks while 7/8 weeks in a term are for routine and administrative matters. In terms of learning time, this wastage is significant. The cost implication is enormous and remedies to increase instructional time need to target the school management, organization and national policies.

The CBE requirement indicates how efficiently the curriculum is being implemented and implies how cost effective teachers' salary are. But if pupils do not get the specified contact hours, the implication is that the system is inefficient. The consequence of this inefficiency is likely that: (a) the syllabus may not be completed in time; (b) extra time would have to be created to coaching pupils outside the normal classroom hours, for example, after school and during holidays; and (c) teachers' services become more costly, both to parents and the government. This is because teachers would be paid for the work which is not fully done and will be paid extra money for the extra time they put to complete the work which they could have done during normal learning time.

4. Conclusion

The following conclusion can be made from the objectives of the study:

a) Academic performance index has been fluctuating over the eleven year period of the study. In a year, a paltry 5 percent would get grades A to B+, 30 percent would get B to C+, 50 percent would get grade C to D+, while 15 percent would get grades D to E. The implication was that only 5 percent would gain direct entry to public university while the rest would rely on externalities to move to the next stage of learning or get job placement in the economy.
b) The general performance in languages and sciences was unsatisfactory; the performance in mathematics was very unsatisfactory while the performance in humanities featured some satisfactory performance. By implication the main subjects that are necessary for the implementation of vision 2030 are lagging behind in terms of performance index and these are English, Kiswahili for social pillar while Mathematics, Biology, physics and Chemistry for technological development.
c) Poor academic performance is mostly due to inability of teachers to complete syllabus. Very little time is spent on actual learning and time –on-task seems to be significantly reduced. Teachers' spend less time on actual teaching (instead of the expected percentage range between 64 and 79 percent, they spend 54 percent of a 234–hour per week).

5. Recommendation towards improving academic performance

In order to solve the problem of Time-on-Task which stands at 54 percent in Siaya District, there is need for performance contracting to be introduced at secondary level of education. This will ensure that idleness among teachers is significantly reduced. Cases of absenteeism will also be significantly reduced. The main source of low transition rate and poor performance is the inability of schools to cover the syllabus due to diminished time – on - task basis of teachers and school. Stringent measure should be put in place to ensure that syllabus coverage is complete and re-distribution of teachers where teaching load is low. This can be ensured through appropriate monitoring and quality control through increasing the number of quality assurance and standards officers at the district level.

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