Education during a Period of Austerity: Uganda, 1971–1981

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General Background

The breakdown of legal authority in Uganda, precipitous over a decade, has undermined the viability of both public and private enterprises. Goods which used to be manufactured locally must now be imported. Products which used to be exported are now uncompetitive due, among other things, to an absence of spare parts and transport. No new roads have been constructed since the breakdown began; and most roads have fallen into disrepair. The number of operating hospitals and health services has shrunk; and veterinary services—dip tanks, inoculations, and so on—have had to be withdrawn from many rural areas because of scarcity of transport, pesticide, and medicine. Urban services (such as garbage collection or health inspection) are erratic; and even water supply has become a problem in areas where before it had functioned dependably. Normal business transactions are conducted with difficulty; courts function irregularly; commerical insurance is usually unobtainable. Industrial investments of the 1960s, both government and private, have incurred negative economic returns during the 1970s, as have investments in tourism and agriculture, particularly with respect to tea, sugar, and cotton. The breakdown of legal authority has created uncertainty throughout the economy.

Status of Education

Enrollment

The collapse, characteristic of the Ugandan economy and many functions of government, did not occur in education. Though subject to the general fiscal constraints and breakdown of civil order, both public and private investment have continued to grow. In 1969 there were places for 113,000 primary school students in grade 1; in 1979 this figure had more than doubled, to 252,000; and primary enrollments had risen from 600,000

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TABLE 1
NUMBER OF EDUCATIONAL INSTITUTIONS AND THEIR ENROLLMENT, 1969 AND 1979

	1969		1979	
	Institutions (*N*)	Enrollment	Institutions (*N*)	Enrollment
Primary schools	1,986	632,162	4,229	1,223,850
Secondary schools*	117	29,540	210	61,126
Teacher training†				
Grade 2	. . .	3,282	. . .	6,129
Grade 3	. . .	335	. . .	1,111
Grade 2 (in-service upgrading)	30	121	32	695
Makerere University	1	1,832	1	4,345

* Of the 117 schools, 46 were private; 92 of the 210 are private schools.

† The number of teacher training institutions refers to all categories of primary school teacher training. Grade 2 are those teachers who have not completed secondary school; grade 3 are those who have completed secondary school.

to 1.2 million (table 1).[1] This increase during the 1970s required additional facilities and furnishing of 2,243 new primary schools, an average of about 230 per year. The capital cost of these new facilities was borne wholly by private citizens.[2]

In secondary education the government frequently provided the requisite capital for construction. The number of students and schools doubled between 1969 and 1979, from 30,000 to 61,000, and from 117 to 210, respectively.[3] But even in secondary education private investment has been important. In 1969 there were 46 private secondary schools in which the entire costs of education—both capital and recurrent—fell on parents rather than on the state; by 1979 this number was 92, thus increasing the private share in secondary education from 39 to 44 percent.

In preuniversity courses ("A levels") and in the university itself—where costs (except foregone earnings) are borne entirely by public funds—the number of students has grown in a fashion parallel to that of primary and secondary education. There were 2,097 students preparing for entry to university in 1969 and 1,832 students attending the university; in 1979

[1] The number of grade 7 students in 1969 was 39 percent less than the number of grade 1 students the same year; in 1979 this difference had grown to 47 percent. This "progression rate" is low, but it is still higher than for 16 countries in Central America and the Caribbean, and five countries in South America, all with higher levels of GNP per capita.

[2] As is typical of the region, the Ugandan government has never thought itself able "to afford" the cost of primary school construction, which has been left to private sources—churches, parents, and others. Construction, given local availability of materials, costs US$30,000 per school. Costs of construction up to international standards of health and safety would be four times higher.

[3] The proportion of female secondary school students increased from 25 percent in 1969 to 29 percent in 1979.

the figures had increased by factors of 2.7 and 2.4 to 5,604 students at A levels and a university enrollment of 4,345.

Administration

Consistent growth under adverse social conditions is one indicator of a sector's ability to survive; another test is the degree to which it can continue performing complex administrative functions. The education sector in Uganda continues to manifest managerial prowess. The primary-leaving examination (PLE) is one example. The PLE is the single most complex administrative function in the education sector; and politically it is the most sensitive. The exam has to be redesigned and 150 items must be newly pretested each year. The exam is printed in Nairobi or (in two instances in the last 10 years) in London. It comes in three sections—math, English, and general knowledge (geography, history, and science). After printing, each section must be sealed separately and made available for each candidate—of which in 1979 there were 132,000. These 396,000 separate test instruments must be delivered at exactly 7:30 A.M. on a given day in December at 4,000 different school locations around the country. Accompanying them must be exactly the same number of answer sheets and thick lead pencils, invigilators from neighboring schools, and (a rival) school's managing committee.[4] In 1978 the exam required a special airfreight flight from London to Kampala; 40 lorries; a military escort—of battalion strength; and approximately 3 percent of the Ministry of Education's recurrent outlays.[5] After three days of testing, the envelopes containing only each individual student's identification number are collected, sealed, and transported back to either Nairobi or London for grading by computer. Results are sent to district education offices and then to each of the 4,000 primary schools within 2 months. Despite extraordinary limitations on foreign exchange, despite (since independence) five changes of government, and despite unprecedented levels of internal strife, each year the PLE has been administered on schedule and without scandal.

Persisting Demand

Studies of the rural economy in Uganda a decade ago found primary education to be a strong determinant of adaptability and productivity in village enterprises. For a youth working in a village industry in rural Buganda District, the chance to earn more than 50 ushs per month in 1971 was 55 percent if he had completed grade 7; but 74 percent if he had ever attended a secondary school. In rural Bugisu the chances were 26 percent for youths who had not gone beyond grade 4, but 52 percent for those who had; in rural West Nile the respective chances were 41

[4] No staff member is allowed to be present when the test is administered to his school.

[5] The budget of the Schools Inspectorate Division is 3 percent of the Ministry of Education's recurrent costs; the cost of administering the PLE is only one of the division's functions.

percent and 70 percent.[6] Though village industries too have been hurt by the general collapse of the economy, they continue to produce for local markets. If the returns to primary education did not continue to be substantial in this "informal" sector one would not observe growth of private investment in primary education.

Estimated social rates of return to investment in Ugandan secondary education in the 1960s (29 percent) are typical of the East Africa region (Kenya and Malawi = 21 percent).[7] In East Africa, secondary education opportunity is available to less than 10 percent of the age cohort and returns are generally higher than for other regions on which comparable data exist.[8] There are no recent figures on the economic returns to education in Uganda, but there is reason to suspect that the attractive estimates calculated in the 1960s still pertain.

This is so because in secondary education private investment continues unabated. Educational opportunity has barely kept pace with population growth and therefore is still scarce. Moreover, with the exodus of all Asian and many Ugandan entrepreneurs and middle-level manpower, employment for secondary (as opposed to school leavers with less than secondary school) has remained competitive despite economic stagnation.

There are other reasons too. Employment in Uganda has always been dependent upon the academic performance on the PLE and (for the 12 percent who gain entry to secondary school), upon performance on the "O level" examinations at the end of their fourth secondary year.[9] Reliance upon examinations is not unusual. Studies conducted 10 years ago came to the conclusion that in contrast to industrialized countries, academic performance in Uganda was not predetermined by an individual's social

[6] Secondary vs. nonsecondary schooling could not be used as a comparison throughout these three districts because, at the time of the survey, there were no secondary school youths within the West Nile or Bugisu villages samples. See Christine C. Wallace and Sheldon G. Weeks, *Success or Failure in Rural Uganda: A Study of Young People* (Kampala: Makerere Institute for Social Research, n.d.).

[7] John Smyth and Nicholas Bennett, "Rates of Return to Investment in Education: A Tool for Short Term Educational Planning Illustrated with Uganda Data," in *World Yearbook of Education*, ed. George Z. F. Berclay and Joseph A. Lauwerys (London: Evans Brothers, 1967). Stephen P. Heyneman, "The Evaluation of Human Capital in Malawi," staff working paper no. 420 (Washington, D.C.: World Bank, 1980).

[8] The proportion of Ugandan primary school leavers able to continue to secondary school has declined from a high of 31.5 percent in 1964 to 12.6 percent in 1979. Secondary education is growing, but is still scarce.

[9] Janice Currie, "The Occupational Attainment Process in Uganda: Effects of Family Background and Academic Achievement on Occupational Status among Ugandan Secondary School Graduates," *Comparative Education Review* 21 (1977): 14–28; similar results have recently emerged from studies in Kenya and Tanzania. See R. Sabot et al., "Cognitive Skills: Their Determinants and Influence on Earnings in Two Poor Urban Economies," discussion paper no. 4 (Washington, D.C.: World Bank, Population and Human Resources Division, February 1981); M. Boissiere, J. Knight, and R. Sabot, "Earnings Schooling, Ability and Cognitive Skills: An East African Comparison," mimeographed (Washington, D.C.: World Bank, Development Economics Department, April 1982).

status.[10] Moreover, the most powerful determinant of occupational attainment was said to be the level of an individual's past academic performance; it was more powerful than either sex or social status. This was attributable to two things: the high degree to which educational qualifications have been used as formal determinants of labor market entry;[11] and the degree to which educational attainment itself is determined by academic performance rather than by quotas or by political recommendations.

Consistent Equity

There has been no new evidence gathered with respect to school leavers in the labor market since Currie's study of 10 years ago; but some new information is available with respect to social status and examination performance. Six out of 16 primary schools, originally evaluated in August 1971 in West Buganda (now called Mpigi) District, were reevaluated in August 1981. The original 16 had been selected at random. The six revisited schools were not selected randomly, but they do contain substantial variation—from Buddo (one of the most expensive in the country) to Bugobango (one of the poorest). Achievement items were randomly selected from the mathematics section of the same government examination used as the dependent variable in the 1971 study. Thus, these data are derived from the same school, the same test, and from the same grade level at two points in time—first in 1971 and then in 1981. Results are displayed in table 2.

Correlation coefficients from 1971 illustrate how little relationship there is between parental education and mathematics achievement in these six schools. There are, of course, many possible explanations for this;[12] but however valid one or another may be, what is evident is that the 10 years between the two points of data collection have not altered the ambiguity of the relationship. In 1971 only three coefficients were in excess of .2 (two were positive correlations, one was negative, and none were statistically significant). Out of the 12 coefficients in 1981, two are

[10] Furthermore, individuals from some of the more isolated ethnic groups have been found to perform distinctly well; the average Karamojong male reaching grade 7, e.g., will perform slightly higher than the average Muganda male. Stephen P. Heyneman. "A Brief Note on the Relationship between Socio-Economic Status and Test Performance among Ugandan Primary School Children," *Comparative Education Review* 20 (February 1976): 42–47; Stephen P. Heyneman," Relationships between the Primary School Community and Academic Achievement in Uganda," *Journal of Developing Areas* 11 (January 1977): 245–59.

[11] This generalization does not necessarily apply to the military.

[12] Among the explanations are lack of socioeconomic status variance, selectivity of low-status children, multicollinearity between socioeconomic status and school quality, alternative definitions of social status, etc. See Stephen P. Heyneman, "Why Impoverished Children Do Well in Ugandan Schools," *Comparative Education* 15 (June 1979): 197–85 (World Bank reprint no. 111); "Differences between Developed and Developing Countries: Comment on Simmons and Alexander's 'Determinants of School Achievement,'" *Economic Development and Cultural Change* 28 (January 1980): 403–6; Stephen P. Heyneman and William A. Loxley, "The Effect of Primary-School Quality on Academic Achievement across Twenty-nine High- and Low-Income Countries," *American Journal of Sociology* 88 (May 1983): 1162–94.

TABLE 2
CORRELATIONS BETWEEN PARENTAL EDUCATION AND MATHEMATICS ACHIEVEMENT IN SIX SCHOOLS, 1971 AND 1981

	Mathematics Performance in Grade 7			
	1971		1981	
Kabasanda:				
Mother's education	−.03	(N = 59)	−.19	(N = 39)
Father's education	−.02		.05	
Bugobango:				
Mother's education	.20	(N = 23)	−.08	(N = 18)
Father's education	.13		.47*	
Mabuye-Katende:				
Mother's education	−.01	(N = 36)	−.10	(N = 24)
Father's education	.10		−.03	
Mpigi Roman Catholic:				
Mother's education	−.03	(N = 16)	−.29*	(N = 43)
Father's education	.27		−.18	
Nabusanke:				
Mother's education	−.22	(N = 38)	−.35*	(N = 31)
Father's education	.04		−.22	
Buddo:				
Mother's education	−.14	(N = 60)	−.08	(N = 53)
Father's education	−.03		−.06	

NOTE.—Mathematics achievement in 1981 was derived from items on the 1971 Uganda Primary School Leaving Examination.
* $P < .05$.

statistically significant, but they are inconsistent—one is positive (father's education and achievement in Bugobango), and one is negative (mother's education and achievement in Mpigi).

So far as these six schools are concerned one would have to conclude that the structure of social stratification, at least as far as it is determined by achievement, is no more closed now than it was a decade ago. If the nonrelationships between social status and examination performance which continue to pertain in these six schools were to represent the country at large, then it would imply that the "push" on the part of parents for their children to perform well in school still does not differ greatly between wealthy and impoverished families.[13] It would imply that even Ugandans from the more impoverished social milieus would still believe that selection in the education system operates fairly and that the economic returns for success greatly outweigh the considerable private costs.

[13] Access to educational facilities does differ from one region to the next, and therefore wealthy families have greater access by virtue of the fact that they are disproportionately situated in particular regions.

TABLE 3
GRADE 7 MATHEMATICS ACHIEVEMENT IN SIX PRIMARY SCHOOLS, 1971 AND 1981 (% Correct)

	1971	1981
Kabusanda	52.0	42.5
Bugobango	45.6	41.1
Mabuye-Katende	43.2	58.3
Mpigi Roman Catholic	38.0	51.6
Nabusanke	47.8	40.3
Buddo Junior	59.4	64.3
Average	47.7	57.6

NOTE.—Ten out of 50 questions were randomly selected from the 1971 Ugandan Primary Leaving Examination and reapplied in the same schools. Means and standard deviations were adjusted to facilitate comparisons with performance on the same test 10 years earlier.

Educational Quality

There has been surprisingly little decline over the last decade in mathematics achievement of primary school students despite endemic educational hardships. Three of the six schools visited actually increased their mathematics performance between 1971 and 1981 (table 3). The anomaly—of sustained mathematics performance—during a period of educational austerity can be attributed to three circumstances. The level of teacher quality has shifted upward in the last 10 years due principally to the retirement of 400 vernacular (non-English-speaking) teachers.[14] The resulting rise in the teacher's comprehension of the English language in the six sample schools is given in table 4.[15] Second, schools have attempted to compensate for the scarcity of classroom resources by requiring students to spend an additional 2 or 3 hours per day memorizing lessons written on the blackboard. This is particularly evident in Mabuye-Katende where there is not a single pupil textbook available, and where students are required to arrive an hour and a half before school and leave an hour and a half after school.[16] There, in Mabuye-Katende, mathematics performance increased between 1971 and 1981 from an average of 43 percent to 58 percent correct. Last is the fact that mathematics is less text dependent than science, language, history, and geography. If comparable scores were

[14] "Vernacular teacher" was the category of teachers with the lowest level of educational preparation.

[15] There has also been a fairly even level of availability of resources over time at the homes of the students attending these six schools. The proportion claiming a bicycle at home is approximately the same, as is the proportion claiming access to a radio, a clock, a car, and a camera.

[16] For students in grades 5, 6, and 7 this extra coaching is mandatory, as is payment of an extra fee for this service (300 ushs per student).

TABLE 4
TEACHER QUALITY IN SIX PRIMARY SCHOOLS 1971 AND 1981

	English Language Test (% Correct)		Educational Attainment (*N* of years)	
	1971	1981	1971	1981
Kabasanda	63	100	11.2	11.6
Bugobango	37	97	10.3	11.6
Mabuye-Katende	n.a.	93	n.a.	12.5
Mpigi Roman Catholic	70	79	11.8	9.5
Nabusanke	63	n.a.	12.9	n.a.
Buddo Junior	77	94	11.4	13.6
Average	62	93	11.5	11.8

available over time in these other subjects, they would likely show a decline in achievement commensurate with the decline in school resources.

As resourceful as these schools have become, they are now at a pedagogical stalemate; there is no way to improve the obviously inadequate educational system without an improvement in the available classroom resources. Every school has experienced a decline in textbooks (table 5). In four of six schools visited there was not a single text available in grade 1; of four schools with a working duplicating machine in 1971 only one had a functioning machine 10 years later. In 1971 there was an average of one chair for every 1.2 pupils; in 1981 there was one chair for every 8.8 pupils.

Today the norm is for students to spend longer hours in school sitting on the floor, copying and memorizing a lesson which the teacher has summarized on a chalkboard from a single, outdated textbook usually borrowed from a neighboring school. In 1971 all students had their own uniforms, pencils, pens, and a copybook for every subject; in 1981 uniforms are a rarity, and many pupils have to share pencils and notebooks. What they are able to copy down and memorize is the core of their educational experience. The effect of this scarcity is then passed up through the system. In secondary school 49 percent of those who sat for their O levels in 1980 either failed or received the lowest possible pass,[17] and in university 20 percent of those who attempted to major in science failed to obtain a degree in their chosen specialization.[18]

[17] Secondary school books exist but are frequently donated from other countries with little concern as to their applicability. Masaka Secondary School, e.g., has 35 (completely unused) copies of a book published in 1959 entitled *Circuit Theory of Linear Noisey Networks: A Study of Amplifier and Spot Noise Performance and Its Optimization.*

[18] The number of journals available at the Makerere University library has declined from 2,215 in 1975 to 373 in 1979; the number of books purchased declined from 5,142 in 1973 to 55 in 1979; the library's foreign-exchange allocation is 11 percent of what it was 10 years ago; its senior staff has been cut by 40 percent, its junior staff by 28 percent.

TABLE 5
THE AVAILABILITY OF SCHOOL RESOURCES IN SIX PRIMARY SCHOOLS 1971 AND 1981

	Pupils (*N*)		Teachers (*N*)		Ratio of Pupils to Teachers (Ratio 1:...)		P1 Textbooks (*N*)*		Ratio of P1 Texts to P1 Students		P7 Textbooks (*N*)†		Ratio of P7 Texts to P7 Students		Duplicating Machine Working	
	1971	1981	1971	1981	1971	1981	1971	1981	1971	1981	1971	1981	1971	1981	1971	1981
Kabasanda	428	730	14	19	31	38	66	0	1.1	0	148	26	2.0	0	Yes	No
Bugobango	266	306	6	9	44	34	56	0	1.1	0	58	33	1.8	0	Yes	No
Mabuye-Katende	232	297	9	9	26	33	110	0	2.9	0	134	0	2.9	0	No	No
Mpigi Roman Catholic	320	562	9	16	36	35	246	3	5.1	.03	335	29	7.1	.7	No	No
Nabusanke	282	315	9	9	31	35	105	0	2.2	n.a.	200	0	3.2	0	Yes	No
Buddo Junior	288	489	14	16	21	31	388	326	10.8	6.0	1943	835	27.8	16.1	Yes‡	Yes
Average	303	452	10	13	30	35	162	55	3.9	1.0	470	232	7.5	2.8		

* In 1971 there was one chair for every 1.2 pupils; in 1981 there was one chair for every 8.8 pupils.

† The Ugandan school curriculum includes the study of 12 different subjects: English, vernacular, health, agriculture, geography, religion, music, math, science, history/civics, physical education, and arts/crafts. The total number of textbooks available reflects the total for all 12 subjects; textbooks were included without regard to their physical condition or quality.

‡ Also available in 1971: tape recorder, radio, filmstrip projector, television, phonograph, roll maps, tennis court, swimming pool, volleyball, badminton, table tennis, and cricket; in 1981 the school had a radio and some roll maps.

TABLE 6
ALLOCATION OF NONSALARY SCHOOL RESOURCES AS A PERCENTAGE OF TOTAL RECURRENT EXPENDITURES, 1978–79

	Primary	Secondary	Tertiary
Uganda	.1	. . .	11.4
Africa	3.8	12.7	13.1
Asia	8.8	13.8	22.7
Industrial countries	14.4	14.8	25.5

SOURCE.—United Nations Educational, Scientific, and Cultural Organization, *Statistical Yearbook 1978–79* (Paris: Unesco, 1980).

Educational Finance

Nineteen percent of the national recurrent budget was allocated to education in 1981. The impact of this public investment appears high and constant; but this does not imply that it is utilized efficiently. Paying a grade 3 teacher to copy from a worn-out textbook onto a blackboard and to supervise its memorization by 50 students is an ineffective utilization of (in relative terms) expensive talent. But what level of classroom resources should a teacher have to justify the salary?

Table 6 illustrates the proportion of recurrent costs in primary, secondary, and tertiary education allotted to classroom resources in Africa, Asia, and Europe. Among industrialized countries, for example, 14.4 percent of the primary school recurrent costs are allocated to classroom resources—books, maps, visual aids, furniture, and the like. In Asia it is 8.8 percent. In Africa it is 3.8 percent. In Uganda the proportion is the lowest in the world—only 0.1 percent. In 1971, to study English, the average 16-year-old in Uganda had to share a single book with 10 other students; in the Philippines (as a result of a loan from an international bank) the average student had to share a book with one other student; in the northeastern United States the same age student in the same subject may have had six books of assigned reading.[19] Excluding library and family collections, the U.S. student has 60 times the amount of reading material that is available to the average Ugandan of the same age and in the same subject.

Conclusion

Ugandans do not appear to have lost any of their legendary desire for education, and they have demonstrated this by continuing to send

[19] This figure is based on personal experience. However, the National Center for Educational Statistics in 1982 reported that the average elementary school library had 14 titles for each student. Using this library figure as a yardstick, the typical student in the United States had 140 times the amount of reading material as a student at the same grade level in Uganda.

their children to school on a daily basis under the most difficult of circumstances. So widespread does this appear to be, that regardless of the constraints on foreign exchange, no government has been able politically to afford the collapse of the school system as they have other public and private enterprises. As a social investment, education may be safer than other sectors in which, during times of austerity, there is less consensus over their necessity. With respect to education, there is little danger that the facilities will be underutilized, and there is ample evidence that public demand will continue, despite the vicissitudes of the political environment.