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A Research Programme Consortium on
Implementing Education Quality in Low Income Countries

RESEARCH ON THE QUEST FOR EDUCATION QUALITY INDICATORS: ISSUES, DISCOURSE AND METHODOLOGY

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ABSTRACT

This Working Paper focuses on the quest for education quality indicators through a review of literature and research. Having discussed the issue of what children/ students deserve to receive, and explored the concept of education quality and how it has been interpreted, the Working Paper moves on to discuss different indicators of education quality and effectiveness and models for improving education quality. It finishes by suggesting a taxonomy of educational quality indicators, drawing on what has been written, said and researched so far, which identifies some of the factors/ variables that could be included in any comprehensive study attempting to assess the quality of education provision in a given classroom, school, district or other relevant institution, and which it is suggested could also be used as a basis for comparative analysis of why education systems/ schools are at different levels of quality provision.

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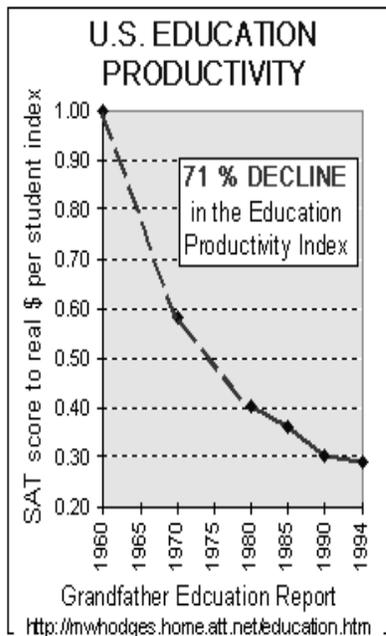
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1. INTRODUCTION: DISCOURSE, ISSUES AND METHODOLOGIES

There has been a lot of thinking and discourse regarding the dominant issues and methodologies on the nature and substance of education quality (see Adrian Vespoor, 2003). The quest for quality provision more so at a basic education level, appears to be focusing on learning acquisition and whether or not expanded educational opportunities will translate into meaningful development for an individual or for society. The issue being presently explored and debated is whether those who are passing through the school systems are actually learning as a result of the available opportunities. The point for consideration is if they are actually gaining useful knowledge, reasoning ability, skills and values. Indeed, Article 4, of the World Declaration on Education for All, Jomtien, Thailand (1990) states clearly that the focus of basic education must, be on actual learning acquisition and outcome, rather than exclusively upon "enrolment, continued participation in organized programmes, and completion of certification requirements."

The focus on quality education is therefore broadened as to include active and participatory approaches that are particularly valuable in assuring learning acquisition and also allowing learners to reach their fullest potential. This will certainly be possible if there is a definition of acceptable levels of learning acquisition for the provided educational programmes and if these acquisitions are improved on over time by effective and efficient systems of assessing learning achievement¹.

Figure 1: U.S Education Productivity



As regards methodology and research on the quest for quality indicators, Michael Hodges (2005) has cautioned against the dangerous erosion of education quality and productivity in the school systems. Unacceptable education quality is real and is a serious threat facing young generations and nations alike. In this case what methodology or approach will generate information that is reliable and valid regarding what our children/students deserve to receive? Recent studies indicate that poor quality output of public schools is not because of too little spending per student it is a systemic problem. Thus the trend in quality monitoring and evaluation is to move toward a holistic approach of system analysis.² The case of America is very instructive. For three decades, American taxpayers have obediently given the education establishment what is said it needed most - more money to lower student-teacher ratios. Well, student-teacher ratios, over a 35 year period, have fallen to 17.3 in 1995 from 25.8 in 1960. Yet, as Eric Hanushek, senior research fellow at the Hoover Institution, argues "Overall student performance has not improved, nor have U.S. students shown any improvement in international achievement tests."

¹ The idea is also to gauge quality in terms of external efficiency indicators and beyond cognitive achievement. This would include giving learners the tools for life, leading to outcomes that are meaningful to both individual and society.

² This bears some striking resemblances to Stufflebeam's Context-Input -Process-Product (CIPP) model and also to Stake's antecedents, transactions and outcomes framework.

2. WHAT DO OUR CHILDREN/STUDENTS DESERVE TO RECEIVE?

The global challenges dictate that our individual countries' children deserve as good a quality education as that received by children of other nations be they Kenyan, Tanzanian, Rwandan, Ghanaian, South African, British or American. As global challenges are accelerating, meeting these will depend on how individual nations engage in trade and knowledge or skills formation. Three conditions are necessary, though not sufficient, for competition:

- (a) that each nation will be better prepared through educational transformation to meet the future economic/political social challenges than prior generations
- (b) that each nation will realise the highest quality education at the lowest cost per student reasonably attainable
- (c) that each nation realises that provision of poor quality education at high and wasted cost will seriously compromise both economic and personal futures.

Yet, our children deserve the major dimensions/elements of a holistic approach to education provision. These elements include: those related to: **quality and motivated teachers, textbooks, quality leadership/supervision, good and effective infrastructure, nutrition and health status, evaluation and assessment systems, language of teaching and learning.** Indeed as pointed out by Agu, Manda and Tukai (2000) in the case of their UNICEF experience the most important questions to ask when discussing quality are quality for what? In other words in whose interests is quality being pursued, and to what end. From the perspectives of the child, parent, teacher and employer, quality is excellence, measured by student achievement, performance and values. The key issue of quality is the learning and achievement of the children. Our conception of quality is of all students achieving at high levels. The critical question is how much do children who attend schools really learn?

Evidence of learning outcomes is disappointing in several countries of Africa (See SACMEQ, PASEC and MLA studies). Despite the differences in methodology, there is a convergence that by use of a variety of indicators that educational quality is low. And the major explanation is that quality and effectiveness are not being helped or enhanced by the "*dysfunctional schools or institutions systems*" as are the other providers. Seemingly the providers of schooling in several countries of Africa (eg. Tanzania, Kenya, Senegal, Uganda) are also not functional as to provide education for selection/placement, for scarce skills and for sociological utility (values).

3. A MULTITUDE OF LABELS

The education quality notion is widespread. The same referent can be found hidden behind a number of different labels. Yet, debates about education quality in several countries have indeed provoked controversy. The controversies provide a range of perspectives from a number of different countries and individuals on developments in the assessment of quality in education. Moshia (2000) has expressed the elusive nature of the concept of educational quality due, as he argues, to lack of educational benchmarks that are comparable overtime. Moshia, defines quality as the level of excellence in educational performance while standards are levels of excellence in quality. He insists that quality is measured using a set of criteria which define the intellectual environment which, in turn, condition the vision and capacities of school leavers or graduates. This, he says, also determines the capacity of a nation to manage its affairs well.³

³ Few studies/authors give a check list of quality indicator variables by quality category (goals, outcomes, personnel characteristics, system/organizational variables, environmental (variables)

Heaton (1977) uses the productivity concept/label. His exposition is indeed a systems approach to the assessment of quality and effectiveness. In this perspective, quality is seen as an outcome of four operating functions. (1) input, (2) processing, (3) output or follow-up, and (4) timing and coordination (see Ratsoy, 1983). The International Test Evaluation studies conducted in the framework of OECD International Education Report have examined the trend of education quality up to the mid-1990s and then the situation afterwards by use of the educational quality productivity index. This index shows the relationship between education quality (SAT Scores) and education spending

Other writers have selected efficiency as the label for quality. These authors have also used the ideas of quality and effectiveness interchangeably, but mainly focusing largely on the output to input ratio. (See Lockheed and Verspoor, 1990 and Heneveld, 1994 on school effectiveness. Ginsburg and Schubert (2001) distinguish definitions of quality that focus on one or more of the following aspects:

- **inputs** (fiscal and other resources as well as characteristic of students, teachers, administrators, instructional materials, and facilities);
- **processes** (nature of interaction in educational activities involving students, teachers, administrators, materials, and technologies);
- **content** (knowledge, skills, and attitudes being transmitted through the curriculum);
- **output** (relatively short-term consequences, such as students' cognitive achievement, completion rates, certification, skills attitudes, and values); and/or
- **outcomes** (long term consequences, such as school leavers' employment, earnings, civic participation, and other attitudes, values, and behaviors).

A range of choices, for example, with respect to content, one can emphasize different curricular subject areas, different perspectives, and different depths of knowledge, More over, the following terms sometimes have been equated with quality in relation to education: (a) **effectiveness** (degree to which goals or objectives are achieved), (b) internal **efficiency** (the relation between inputs and outputs), (c) **external efficiency** (the relation between inputs and outcomes), and (d) **equity** (fairness across social and cultural groups in the distribution of access to schooling, exposure to different types of content and processes, and outputs and outcomes).

Writing on quality of education and the national context, Munishi (2000) insists that the type of training that leads to quality of outputs and outcomes will depend on a number of factors which include: teacher student ratio, educational levels of teachers, equipment/book-student ratio, infrastructure, motivation and accountability.

4. MULTIPLE INDICATORS OF EDUCATION QUALITY AND EFFECTIVENESS

Lockheed and Verspoor's (1990) and Heneveld's (1994) reviews of models of school effectiveness and quality tend to develop four school quality indices. These are (1) **a productivity index comprised of quantity, efficiency and effectiveness measures**; (2) **an adaptability index** consisting of measures concerned with anticipating education problems, keeping up to date, and surviving in a rapidly changing environment; (3) **a flexibility index** which is a measure of schools/education systems coping with unpredictable transformations; and (4) **an overall effectiveness index** comprised of the output/input ratios, survival ability, and flexibility measures. The effective/quality education system is one in which both society and individual needs receive high priority, and that there is usually a number of ways of organising the education system that will lead to yielding approximately the same levels of quality.

There is a profound relationship between resources, enhancing efficiency indices and improving quality and relevancy indices. We would like to emphasize that quality is an elusive concept, and indeed as pointed out by Colclough (2005) *"its content depends upon how we choose to define our preferred outcomes of schooling."* Even with this conceptual difficulty we would like to add further that variations in school or inter-country quality or even inter-districts differences in education outcomes are mainly caused by differences in the resources available to these units. The 2005 UN Report contends that countries performing poorly on the Human Development Index have a propensity to implement internal policies which are *"perpetuating obscene inequalities"*

A case of Shinyanga Region (province) in Tanzania is illustrative. The 2001 Tanzanian Education Status Report indicated Shinyanga as doing poorly in all education performance quality indicators and on resources investment parameters. With Oxfam support and resources reaching schools in Shinyanga⁴ through a PEDP⁵ capitation grant formula-intervention Shinyanga received a bigger share of education investment starting in 2002. Recent surveys by Paulsen and Galabawa (2005) tend to suggest that in Shinyanga, schools have become more child-friendly and this appears to have improved pupils retention, attendance and cognitive achievement as measured by the PSLE⁶ examination results. On the other hand one notices that teachers and district officials have accepted change in pedagogy and how professional development could be cost-effectively designed and implemented through mentoring and school based support.

Table 1: Ex-ante and Ex-post Primary Education Situation in Shinyanga, Tanzania

Current situation (2005)	Prior to intervention. (2001)
<ul style="list-style-type: none"> • Teacher networking • Teachers using participatory pedagogy • mentoring system accepted • more pupils selected to secondary schools • pupils participate in debates and participatory organs • more acceptance of pupils ideas • Retention improved (teachers and pupils) 	<ul style="list-style-type: none"> • No-teacher networking • Teachers using "chalk+talk" • School inspection only Mentoring system • No pupil(s) selected to secondary in several schools • Priority on construction of classrooms, provision of disks • High incidences of truancy, absenteeism among teachers and pupils

Collective regional and individual countries' national thought and commitment related to policy reforms need to address areas of: ***efficiency in resource use, relationship between education inputs and outputs (outcomes) and effectiveness of graduates and the relevance of education which is being provided to people's life.***

Internal Efficiency and Effectiveness. As regards internal efficiency the following questions are given in the Tanzania Basic Education Strategy and need to be explored and addressed:⁷

- To what extent is the system maximizing the relationship between inputs and outputs?
- Can the same outputs in terms of enrolments, completion rates, measured learning achievement be achieved with fewer financing or real resource inputs?
- Can greater output be achieved by re-deployment of the existing levels of inputs?
- Are we utilizing the principles of rationality and maximization in education transformation process? (maximum and rational utilization of teachers and facilities).

⁴ This case illustrates that quality can be achieved through well managed schools; local boards and committees where parents and community leaders can make sure that the schools serve their children will and have to resources they need

⁵ Primary Education Development Programme was initiated in the context of Poverty Reduction Strategy and HIPC-initiative resource support

⁶ Primary School Leaving Examination usually set and marked by National Central Authority

⁷ We have to admit that though these questions are explicitly expressed there is no sustainable strategy to address them in the context of efficiency formulas.

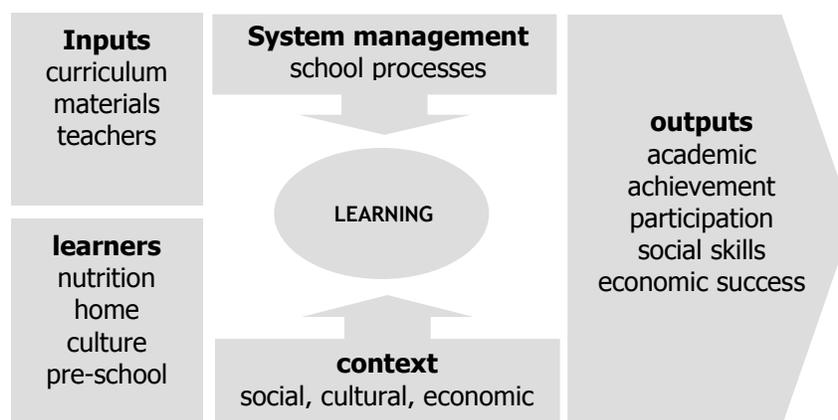
External Efficiency and Effectiveness. In the case of Kenya there are concerns with the relationship between general and vocational education and between schooling and work opportunities (see Koeh Commission, 1999)⁸

- Are schools and teachers preparing pupils and students for future life long learning, society needs, private needs, science needs, occupational needs, transformative needs, regional needs and globalization needs (competition and productivity).
- What returns may be expected in terms of increased productivity and earnings from investment in education/training?
- What are the first and second round spillovers of benefits to investment in education?

As regards organization of the system and quality there is a growing recognition that increasing access to education is a necessary but in sufficient objective. There are other important objectives related to efficiency which have to be pursued by the regional education systems. These are all related to the way education quality and its provision needs to be planned from five stand points:

- putting in place a national financing philosophy of education which assumes and puts in place some critical macro-economic context resource commitment parameters below which quality in education can not be achieved,
- organizing the system in a supportive manner (this would include improving structural design, legal foundations, policy, standards and general institutional arrangements and functions),
- the quality of inputs (this would include students/pupils nutritional and health status, initial preparation of pupils/students, teacher quality and their motivation, availability of text books and learning/teaching materials and general infrastructure),
- quality of education process (this would include pedagogy and general classroom interaction processes, nature of teaching methodology and technology in use, general friendliness of classroom/school environment, assessment procedures and systems of quality control)
- quality of outputs, (this would include stakeholder perceptions and needs on graduates performance, utility of learning experiences and skills, transition and mobility to higher levels of learning, graduates values and morality).

Figure 2: Model of school effectiveness



(Source: Lockheed & Verspoor, 1990; Heneveld, 1994)

⁸ In Kenya these concerns were extensively discussed during the November 2003 National Conference on Education and Training, there was a growing recognition that access and quality are not tradeoffs in education provision.

5. MODELS OF IMPROVING EDUCATIONAL QUALITY

A considerable variety of models of improving educational quality are found in the literature. Some of these models are merely taxonomies of organizational effectiveness variables. Others purport to relate quality variables in cause-effect sequences

The models that are based on effectiveness advocated by Lockheed and Vespoor (1990) and Heneveld (1994), who, drawing on the thinking of Campbell (1977) and Ghorpade (1971), propose the **goal centered and natural system** view of what organizational effectiveness means and how it should be assessed. The goals approach defines education quality in terms of achieving the stated goals. In this context, a school/education system is judged to be of quality to the degree that the goals or the school or system are being achieved. The natural system view like the traditional **system resources** approach defines quality in terms of the ability of the school/system to maintain internal consistency, to utilize resources optimally and to exploit its environment in the acquisition of scarce resources (Ratsoy, 1983)

A reasonably successful effort at pulling together the quality literature is the work of the World Council in Education for All that highlights four sets of determinants of quality education.

- **Characteristics of Students:** the mix of students that enter depends upon their health, nutrition, opportunities for physical and mental stimulation, and the social, economic and demographic patterns of the society.
- **Educational Inputs:** these represent the most important determinants of quality and include teacher characteristics, the availability of educational materials, equipment and facilities, administrative and supervisory activities, and summary measures such as expenditure per pupil. Teacher characteristics include formal academic study, teacher education/development, subject mastery, verbal ability and availability (attendance rates and pupil/teacher ratios). Although there is no consistent and positive relationship between availability of equipment and facilities, there appears to be 'a clear threshold of general availability and quality of facilities necessary for learning to take place' (WCEFA 1990b: 44) all education inputs are ineffective without school and system administrators who are critical in enabling instruction and the processes of motivating teachers.
- **Educational Processes:** improving quality through changing instructional processes is difficult to achieve but as a minimum foundation for reform the time children allocate to learning tasks may be calculated and, where appropriate, increased.
- **Educational Outputs and Outcomes:** the measurement of school quality may be used influence the quality of teaching learning.
- Thus efforts to improve school quality require a determination of school outcomes coupled with the identification and management of multiple inputs to the system (box 1).

Box 1: WCEFA Priorities for School Quality Reform

A systematic effort to improve school quality requires specification and measurement of the desired school outputs and identification of how the multiple inputs of the system interact within the learning process to produce the desired school outputs. The current understanding of these relationships suggests the following priorities for primary schooling reform: (1) improving the availability and use of instructional materials; (2) enhancing teacher effectiveness by emphasizing subject mastery, communication skills, and teacher motivation; (3) improving managerial skills, community and institutional structures, and individual and organizational incentives; and (4) increasing the time actually spent on learning. When these priorities are linked with improved preconditions for learning that enhance pupils' initial capacities, and with community environments that reinforce learning, true gains can be made in school quality and learning achievement for all.

Source: WCEFA (1990a: 48)

The Improving Education Quality (IEQ) Project is a long-term initiative of the United States Agency for International Development (USAID) global Bureau to assist USAID Missions and host countries implement their educational reform efforts in primary and early childhood education, as well as community development, IEQ seeks to:

- Generate knowledge about the school and classroom reality of educators and students;
- Use knowledge to develop a national consensus on reform priorities;
- Develop an in-country capacity of monitoring and evaluating educational results.

The Improving Educational Quality (IEQ) Project begins its process for defining educational quality by collaborating with colleagues in developing countries (e.g. affiliated with an NGO, a Ministry, or a University) to examine aspects for a national educational reform effort⁹. IEQ seeks to work with these colleagues to operationalize definitions of quality through classroom based research to learn about pupils' school and classroom experience, teacher performance, and to clarify standards of student performance. The value of the findings is how they are applied by policy makers and program developers, plus other stakeholders.

IEQ's working definition of quality is relative, not absolute, and views the following elements as essential.

- Quality is dynamic - a work in progress characterized by dialogue among policy makers and practitioners.
- Quality is reflected in student progress and teacher performance in meeting or exceeding appropriate standards (e.g., agreed upon objectives in knowledge, skills, attitudes, values and socialization).
- Progress in outcomes related to teaching and learning must be set in measurable terms.

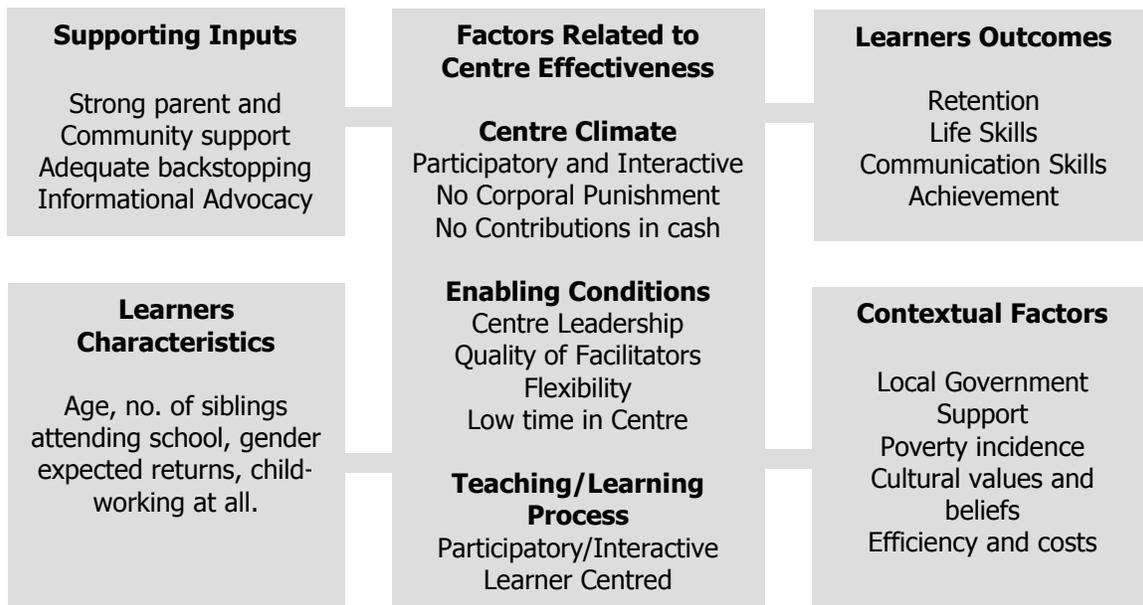
IEQ offers a framework to stimulate dialogue. Definitions vary because of the complexity of issues. There is unlikely to be a universally accepted definition. Host country definitions of quality may be guided by goals of national, regional, and local concerns. Stakeholders operationally prioritize elements of quality. Examples include: academic achievement at basic education level that reflect minimum standards of numeracy, oral expression, and literacy; conditions of learning such as school/classroom environments, institutional strategies; and instructional resources that strive toward treating all students equally so that students are not hindered because of characteristics such as gender, socioeconomic status, geography, or ethnicity.

The Complimentary Basic Education in Tanzania (COBET) pilot strategy as implemented by UNICEF in Tanzania is both quantitative and qualitative in nature and in a way it evaluates the basic education quality indicators.

The actual data collected to monitor education quality could be categorized as either qualitative or quantitative. In each case the study collected data from respondents and available reports on the general performance of COBET implementation focusing mainly on factors that could have determined or influenced COBET implementation and effectiveness. The actual data collected were guided by the Conceptual Framework shown in Figure 2.

⁹ The IEQ's partner countries are EL-Salvador Guatemala, Guinea, Haiti, Malawi and Uganda. The USAID Bureau PARTNES ARE global Bureau, Africa Bureau, LAC Bureau and ENC Bureau.

Figure 3: Conceptual Framework: Factors that determine COBET Effectiveness¹⁰



Source: Galabawa and Lwaitama (2003), also see ADEA (2004)

Supporting Inputs Data

- Indicators of p/arent/community support: Data was collected on parents labour contribution; participation in committees/meetings; provision of furniture; and payment or topping up of facilitators allowances.
- *Indicators of education system support:* The relevant data were district contribution towards facilitators' honoraria and salary for centre coordinators, monitoring and visitations; workshop and seminar facilitation.
- *Indicators of adequate material Support:* The major indicators of this were learners' material and facilitators development activities and manuals.

COBET Learners' Characteristics Data:¹¹

Several data related to learners background were collected and included: age; gender; number of siblings, number of siblings in school; marital status of the learners, household support; work history; distance to COBET-centre; education level before COBET information; parentage, whether orphaned or not and whether living with both parents, single parents or guardian.

Data Related to COBET Centre Effectiveness

Centre-Climate: Data related to centre-climate included: Centre physical conditions e.g. buildings; number and state of furniture; state and display of teaching-learning materials; classroom learners ratios (CLRs); use of rewards and incentives (e.g. use and non-use of corporal punishment); order and discipline levels; centre routine and time-table organisation. Several factors generated data related to enabling conditions. These *were:* effective centre coordination; capabilities of facilitators; signs and number of autonomous decisions made; level of flexibility; time spent in COBET-centres by learners.

¹⁰ This conceptual framework is a simplification of reality. In the real world things may be more complex. Yet, its utility lies in its ability to direct attention of policy makers on the priorities and choices.

¹¹ The Complementary Basic Education in Tanzania (COBET) was designed by UNICEF/Tanzania government for the purpose of ensuring effective implementation and achievement of the children's right to basic education

Teaching and Learning Process Data

Data on this component were collected through observations and surveys of other already prepared reports on issues such as: the level of learners' interaction and time on task; the general methodology of teaching as used by facilitators. Information was also collected on type and nature of homework given and the types of assessment and feedback.

Learners' Outcomes Data

Level and nature of participation; learners' scores on constructed Mathematics and English tests; facilitators' assessment of COBET achievement on related skills; learners' opinions on achievement of social and vocational skills; learners' expected returns.

Contextual Factors and Outcomes

Internal efficiency indicators; direct and indirect Costs.

The state of thinking of quality education has also identified what are called blind alleys and promising avenues. This state of thinking as given by Throsby and Gannicott (1990) encapsulates a broad view:

- Trained teachers make a difference
- Class size is not relevant
- The provision of instructional materials is one of the most cost-effective ways of raising the quality of education
- Education is most effective if initial instruction uses the mother tongue
- Lavish buildings and equipment will not raise quality
- Curriculum reform will not necessarily raise educational quality
- Examinations are useful ways of monitoring school quality
- Healthy well-fed children learn better
- Amount of learning time affects educational outcomes
- Quality depends on good decentralized education management

On the other hand Lockheed and Verspoor (1990,) have shown that some of the promising avenues in improving quality included the following: (1) *curriculum*, improving the implemented curriculum, (2) *learning materials*, like provision of good textbooks/teacher guides; (3) *time*, especially as related to in service training, interactive radio instruction, programmed materials and (4) *teachability*, like provision of pre schools targeted at disadvantaged, snacks/breakfast, micro-nutrient supplementation and parasite treatment.

The ineffective quality improvement blind alleys are given as (1) adjusting intended curriculum (2) provision of learning materials like computers in the classroom (3) class size reductions below 40-50 students (4) provision of long pre-service pedagogical training and (5) provision of school lunches.

Another example of successful implementation of quality improvement initiatives is the Oxfam GB education programme in Shinyanga region in Tanzania. The Oxfam GB's education programme is having a marked impact on standards of teaching and learning, opportunities for wider learning, dissemination and engagement in policy debates. The major objective of the Shinyanga Education Quality Improvement through Pedagogy (EQUIP) programme is to increase the professionalism of teachers, head teachers, and district officials, through training/mentoring/networking, materials provision and development, evaluatory activities and provision of incentives. It was assumed that this undertaking would:

- raise standards of pupil attainment ;
- increase community support for education;
- reduce dropout from school;
- increase attendance of both teachers, boys and girls;
- reduce inequities of access.

The project design embodied all the characteristics of a Pilot Project flexible enough to allow learning by doing and making modifications arising out of the implementation experiences and learning. The project was envisaged that it should not harm the existing system but the lessons born out of the implementation experience, if successful, be taken to scale and be part of the large Education Sector Development Program and Local Government Reform Program. There were institutional linkages with the Teacher Training Colleges, the District Councils, Inspectorate (District level) and the schools.

A number of key features characterized the implementation and results of the major components of the EQUIP Project, namely, 'Training Capacity Building', 'Mentoring and Professional teacher support'. From the various documents made available by the PSG offices such as the Mission Aide Memoires, Evaluation Reports, Work Plans, Statistics on the EQUIP Components Status Reports, Impact Evaluation Reports, and the Base Line Survey it is possible to assert that, overall, the implementation was fairly smooth and results largely positive given the innovative nature of the project design and the project's specific objectives. Where difficulties arose in implementing agreed objectives the close consultation and collaboration between the Oxfam Dar es Salaam and its office in Shinyanga and the District staff facilitated the amicable resolution of the given difficulties.

The EQUIP programme attempted to define quality access of primary education from the classroom teacher-pupils' interaction. This appears to be a broader definition of quality access than the one given by conventional authors and in the Tanzanian Primary Education Development Program. Although PEDP mentions that children centred methods were to be used and primary education was to be child centred, its major emphasis in service delivery was more geared at improving facts and figures as related to teacher-pupil ratio (1:40), pupil-book ratio (1:1) as well as school population ratios (1:640). The Primary Education Develop Program also attempted to reduce the number of subjects studied and examined.

The impressions on quality access from field survey based on spot visits to schools in both the municipal and rural-Shinyanga districts showed positive changes. The relationship and quality of interaction between the teachers and children in the schools visited tends to suggest that the interaction corresponded with a child-centred pedagogical approach; Pupils and teachers appear to engage in group work as sources of learning as opposed to traditional chalk and talk approach.

There was an improved availability of teacher made conditions and resourcing of teaching and learning materials. One could observe talking classrooms and walls which had charts and diagrams. Compared to the situation described in the baseline survey, the environment provided by the teacher-made Teaching and Learning materials were more child friendly and attractive to pupils.

Table 2: Observed Indicators of Quality Education in EQUIP

Learning Outcome Expected	Indicators observed
Behaviour Change	<ul style="list-style-type: none"> • pupils demonstrated what they had learned in answering and in posing questions; • pupils appeared able to express themselves; • pupils showed confidence and creativity; • pupils were able to abide to peer groups; • teachers accepted participatory pedagogy; • teachers and district officials accepted mentoring
Efficiency and effectiveness	<ul style="list-style-type: none"> • schools were well organized; • school were disciplined; • children’s books were for most part marked; • teachers had work plans/schemes of work;
Good Relationship	<ul style="list-style-type: none"> • pupils looked happy and assured; • teachers treated pupils with respect; • children work recognized by teachers; • pupils participated in debates, participatory organs; • pupils contributed ideas and these were accepted;
Eagerness to personal and others’ development	<ul style="list-style-type: none"> • value of selection to secondary education perceived highly; • more pupils and teachers use library and borrow books; • teachers accepted change in pedagogy;

Source: Shinyanga Oxfam – GB Report files survey by Authors

The pupil attendance registers indicated that truancy and repetition rates were high at grades one and four levels. That the truancy and repetition at grade one was falling was an indication that the environment in the school was becoming friendlier to the young and new entrants over time. However, because of the qualification examination at grade 4, most parents, it would seem, still prefer the children to repeat the grade at that level so that they can make up before proceeding to grade 5. Teacher “mentoring” records were not yet well organized and, kept as such, one could not gauge with certainly the degree of attrition and truancy rates among teachers. However, we were informed of long teacher absences at the end of the month, when they spend substantial school-time chasing their monthly salary payments which are often several months delayed. It was perceived by respondents (who included parents) that the EQUIP schools registered marked improvement in the non-salary resources available to the relevant schools with per-pupils resources varying from around US \$ 3.8 to around US \$ 8.0.

These improvements seem to have contributed to significant improvement in the academic performance by the relevant schools as reflected in the fact that the proportion of pupils in EQUIP schools scoring A, B to C grades in the primary School Leaving Examination (PSLE) increased. This evidence with respect to reduced repetitions, dropout rates and improved performance on standardized examination (PSLE) may be too weak and dependent on the way the analysis was done to conclude that any differential improvement occurred in these areas. Yet, this said, we need to emphasize that field observations and interviews did not seem to indicate that there was a sign of deteriorating performance for the EQUIP studied sample as a whole.

In the attempt to gauge how educational quality can be improved in the context of moving towards EFA, the Association for the Development of Education in Africa (ADEA) initiated the exercise on the challenge of learning to improve the quality of education in Sub-Saharan Africa. The forum for dialogue and learning has produced effective policies and practices for improving educational quality.

For ADEA, the major challenges are establishing a culture of quality among the main stakeholders in the education system and development partners; providing them with policies, strategies, methodologies and operational tools to leverage quality improvement; and thus facilitating the transfer of lessons learned at the international and/or regional levels towards a country specific context.

ADEA proposes to build on seven pillars as a foundation for extending, deepening and integrating this process in the following fields:

- teachers' professional development;
- implementing reforms at the school and classroom levels;
- decentralization and diversification of provision, and participation by communities and parents;
- adaptation of curricula and use of national languages;
- monitoring and evaluation of quality;
- equity, equality and financing issues.

ADEA gives the following strategies for action and for planning purposes.

- the continuation of **research and experimentation** oriented toward learning-by-doing, investigation of promising practices, the development of innovation in the field and the production of knowledge that is relevant in the African context;
- stepping up action in the field through support **to information sharing and capacity building activities** through the organization of meetings between countries facing similar challenges;
- widespread **dissemination of knowledge through publications and other media**: publishing information on promising experiences, keeping others abreast of fields knowledge that are crucial to quality improvement, and sharing the discussions and conclusions of the biennale with a broader public;
- meetings to encourage **reform oriented policy dialogue** and to build a consensus among education stakeholders with a view to joint action.

In brief, the theorizing and research tend to suggest that: (a) there is a variety of synonyms or near perspectives for the educational quality construct; for example, learning outcomes, performance, cognitive achievement, productivity, internal efficiency, external efficiency, and (b) different indicators of educational quality being employed in different studies, e.g. language mastery in PASEC study; levels of reading, arithmetic and life skills in the MLA study and cognitive achievement in SAQMEC study, (c) many definitions of the construct, and (d) the use of a variety of theoretical models for educational quality and its indicators.

6. TOWARDS A TAXONOMY OF EDUCATIONAL QUALITY INDICATORS

By following a generic approach of what has been written, said and researched so far it is possible to construct an eclectic taxonomy of education quality variables. Of note are the following categories of indicators: **(1) goals**, both the stated and un-stated/real because in several cases these may be different. Indeed, individuals have their own educational goals which may be different from the schools/institutions/national goals; **(2) other outcome** measures, including **satisfaction, adaptability, wastage, employability, innovativeness, participation**, obedience to authority/rules/law as; **(3) personnel characteristics**, including **knowledge possessed, level of professionalism, communication skills**, **(4) system/school variables**, including **the nature of TL-process, techniques of TL, the**

school/system structures, the school climate; (5) environmental variables such as **policies, economy, standards, quality control systems.**

Figure 3 identifies some of the factors/variables that could be included in any comprehensive study of attempting to assess the quality of education provision in a given class-room, school, district or other relevant institutions. The figure could also be used as a basis for comparative analysis of why education systems/schools are at different levels of quality provision.

Table 3: Factors Contributing to Educational Quality

Institutional/ School Characteristics	Environmental characteristics	Teacher/ Employee Characteristics	Leadership Policies And Practices
Structure Leadership style Decentralization Formalization School Size PTRs	External Education System Complexity Policy Stability Uncertainly/change National leadership National Commitment	Institutional Attachment Attraction Retention Commitment Motivation	Conceptual skills Strategic Goal Setting Human Relations Support Skills Leadership and decision making School adaptation and innovation Communication processes. Resource acquisition and utilization Labour Market signal
Technology Quality of teachers Delivery TL-materials operations interactive Operations	Internal (Climate) Achievement Orientation Teacher Centeredness Reward-punishment Orientation Inclusiveness	Job – Performance Technical abilities Role, task Clarity	

Source: Adapted from steers (1977:8) and applied to school/Education systems

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