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## **Double – shift schooling and EFA goals: assessing economic, educational and social impacts**

The aim of the paper is to discuss the system of double-shift schooling and assess it from economic, social and educational angles referring to different cases from Sub-Saharan African countries. The paper makes an attempt to prove that despite certain challenges that it faces, the system of double-shift schooling is the best solution for poor countries to achieve the millennium goal of Education for All with limited resources, and an optimum strategy for rich countries to use resources more efficiently.

### ***Background***

Countries with ambitious school expansion policies have made significant investments in school infrastructure, though the additional school places have not always kept pace with enrolment or been matched by increases in the inputs required to maintain quality.

In Ethiopia, for example, the government eliminated school fees and embarked on an ambitious school-building programme. Between 1996 and 2005, the number of primary schools increased by 55 %, mainly through expansion in rural areas (Ethiopia Ministry of education, 2005, cited in EFA Global Monitoring Report, 2008 :109). However, enrolment grew faster, doubling between 1999 and 2005, while the number of teachers employed increased by 75 %. As a result, both classroom overcrowding and the pupil / teacher ratio (PTR) increased (the latter to 71:1), with worrying implications for quality.

Similarly, in the United Republic of Tanzania, school construction was part of the Primary Education Development Plan to accommodate enrolment growth expected after the elimination of school fees in 2001. Though the construction targets were met, they proved insufficient as enrolment increased by 90 % between 1999 and 2005. To cope with the enrolment growth, two-thirds of the classrooms and up to a quarter of the teachers were assigned to double-shift teaching (EFA Global Monitoring Report, 2008 : 110).

Besides, to address the issue of low teacher salaries, a common response by governments to rapidly expanding primary school enrolment has been to make local communities responsible for financing a variety of capital and recurrent costs, such as school construction and the salaries of locally hired teachers or assistants. Ethiopia's third Education Sector Development Programme, for 2005 / 2006 to 2010 / 2011, is a recent example of this trend (EFA Global Monitoring Report, 2008: 110).

### ***Definitions of double-shift schooling***

In Botswana, the term “double-session” has been used to describe schools which have different pupils in the mornings and afternoons, but the same number of classroom hours as pupils in single-session schools, and different teachers for each session (Bray, 2000: 11).

In Zimbabwe, double-session schooling is also called ‘hot seating’ because the school seats are said never to have time to cool down!

In South Africa and Namibia, double-shift schooling is called ‘platooning’. This seems to imply a sort of military – style regimentation (Bray, 2000: 11).

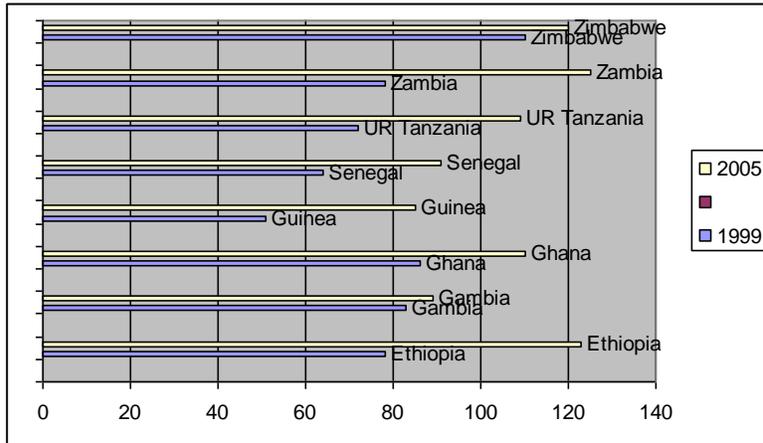
### ***Purpose of double-shift schooling:***

1. To increase the supply of school places while avoiding serious strain on the budget.
2. To broaden access and hence, achieve social equity.
3. To use scarce human resources better: where there is a shortage of teachers, staff may be encouraged to teach in more than one session.
4. To increase salaries of teachers by giving them opportunity to work in two sessions.
5. To reduce opportunity costs for pupils by catering for those who have to work during the day.
6. To reduce overcrowding, class size and alleviate pressure on sports facilities, libraries, school canteens, etc. (Bray, 2000: 12).

### **Enrollment implications for overall Sub-Saharan Africa**

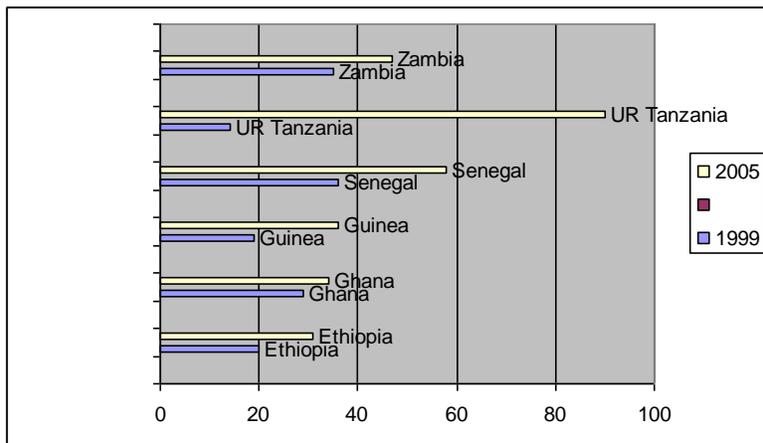
Establishment of double-shift classes has on average improved access in rural as well as urban areas in overall Sub-Saharan Africa. The charts below illustrate the increase in enrollment numbers and ratios in different countries of Sub-Saharan Africa that have implemented double-shift schooling.

**Gross Intake Rate (GIR) in Primary Education (%)**



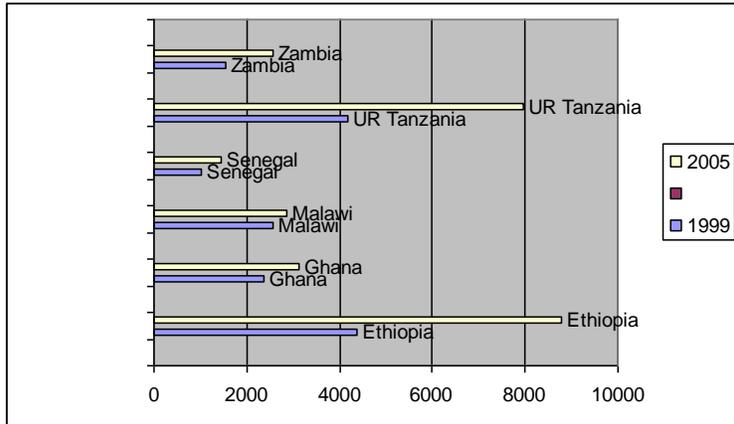
Source: EFA Global Monitoring Report, 2008.

**Net Intake Rate (NIR) in Primary Education (%)**



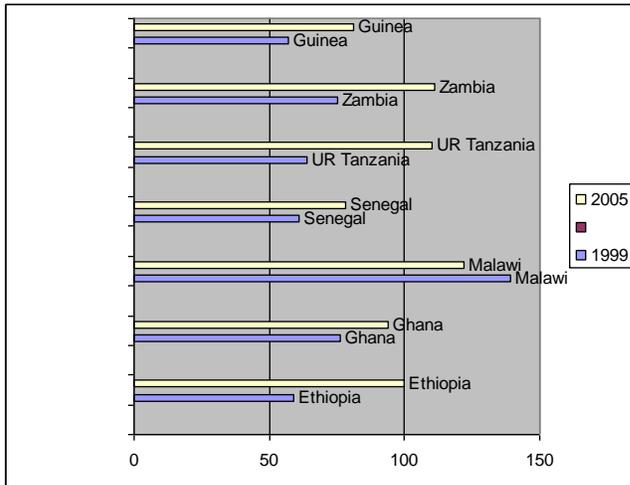
Source: EFA Global Monitoring Report, 2008.

**Enrolment in primary education**



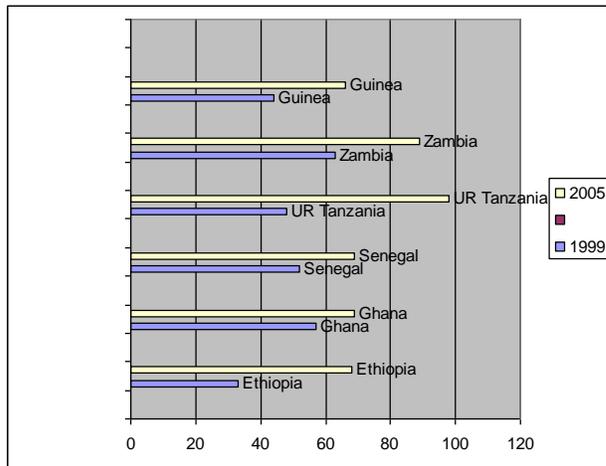
Source: EFA Global Monitoring Report, 2008

**Gross enrollment ratio (GER) in primary education (%)**



Source: EFA Global Monitoring Report, 2008

*Net enrollment ratio (NER) in primary education (%)*



Source: EFA Global Monitoring Report, 2008

In Southern Sudan pupil numbers rose from 343,000 in 2006 to 850,000 in 2007 as a result of ‘Go to School’ initiative supported by the UNICEF. Therefore, double-shift schooling has been introduced in the region.

***Cost – benefit analysis of double-shift schooling***

Cost-benefit analysis of double-shift schools is conducted considering three main factors: economic, educational and social.

**Economic factors**

Double-shift systems reduce the unit costs of education, and can release both pupils and teachers for productive work elsewhere in the economy.

Double-shift schooling provides certain advantages and opportunities. It can broaden school access and contribute to social equity since it offers the opportunity for students who would not otherwise be able to attend school to receive a formal education. Class sizes may be smaller since student populations are divided over two shifts, and where there is a scarcity of teachers, it allows one faculty to teach two sets of pupils. Although teachers would work twice as hard, they would also earn more salary (however not a double salary). In cases where families depend on the labour of their school-age children for sustenance, double-shift schooling with its short hours, allows students who would otherwise not be permitted to attend school the time to work and contribute to family incomes and domestic responsibilities (Herrera, 2003: 692-694). For instance, with the introduction of double – shift schooling in Gambia in 1990, a world-bank neo-liberal policy initiative in which two sessions of school and two cohorts of students are taught by

the same teacher in one school day, girls attend school in the afternoon or the morning for one session and spend less time at school. They are therefore more readily able to meet gendered labor obligations that are central to the moral economy of the household and to the demands of agrarian production (Kea, 2007). The introduction of double-shift schooling in Brikama (in Gambia) has helped to ease the tension between girls' labour obligations and school, as they are more readily able to fulfill these obligations (Kea, 2007: 10).

However, double-shift systems may also have economic costs. They may require parents to employ people to look after children who would otherwise have been in school, and they may contribute to social problems that have economic consequences. In most countries the benefits exceed the costs, but it is important for policy-makers to assess both sides (Bray, 2000: 29).

The following factors should be considered in economic evaluation of double-shift schooling.

#### 1. School organization and timetabling / number of hours

In a double-shift system, schools cater for two entirely separate groups of pupils during a school day. The first group of pupils usually attends school from early morning until mid-day, and the second group usually attends from mid-day to late afternoon. Each group uses the same buildings, equipment and other facilities. In some systems the two groups are taught by the same teachers but in other systems they are taught by different teachers.

Some education authorities extend this model into a triple-shift system. Three groups of pupils study e.g. from 6.30 am to 10.55 am, from 11.00 am to 3.25 pm, and from 3.30 pm to 7.55 pm (Bray, 2000: 10).

Besides, most double-shift systems are of the 'end-on' variety. This means that one group of pupils leaves the school before the next group arrives (e. g. 1<sup>st</sup> shift: 7.40 am to 12.40 pm; 2<sup>nd</sup> shift: 1.00 pm to 6.00 pm).<sup>1</sup>

There might exist overlapping shifts. Students arrive and leave at different times, but at some point are on the school compound together. For example in Malawi there is a complex system of overlapping shifts: pupils in standards (grades) 3, 4 and 5 only come when pupils in standards 1 and 2 leave, but pupils in standards 6, 7 and 8 overlap with both groups.

The savings from multiple-shift systems are often dramatic. In Zambia extensive use of double and triple sessions enabled cost estimates to be reduced by 46 %. Maximum efficiency has been achieved by treating grades 1-4 and grades 5-7 separately. Grades 1 - 4 only have three and a half hours of classroom instruction each day, so if necessary can

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<sup>1</sup> In a triple-shift system, three groups of pupils share one set of buildings and facilities (e.g. In Zambia: 1<sup>st</sup> shift: 7.00 am to 10.45 am; 2<sup>nd</sup> shift: 11.00 am to 2.45 pm; 3<sup>rd</sup> shift: 3.00 pm to 6.45 pm). Because this type of triple-shift can only operate with a very short school day, most authorities only use it as an emergency measure.

operate in triple sessions. Grades 5 – 7 have five hours of classroom instruction each day, so are better retained in double sessions (Bray, 2000: 29).

Teachers and pupils can engage in other economic activities to earn extra living thanks to the free time before or after double-shift school (Bray, 2000: 34).

## 2. Staffing and management

Staffing is another issue in double-shift schools. Schools might employ different teachers for different schools or use the same staff for all shifts. If teachers feel overworked, inadequately compensated and professionally frustrated, then the innovation is unlikely to be successful. ... Teachers may also like the opportunity to increase their incomes through extra teaching in a second shift (Bray, 2000: 70). Therefore, as mentioned above, in certain countries governments encourage communities to get involved in financing teacher salaries.

As for staffing, in Senegal, for instance, where there is a shortage of qualified teachers, some staff teach in more than one session. Whereas, in Nigeria policy prohibits teachers to teach in more than one shift, as the quality will suffer (Bray, 2000:17). Teachers who work in both shifts are paid an additional 25 % of their base salaries. Their work is not double that of their counterparts in single-shift schools, for double-shift schools provide only 20 hours of classroom teaching instead of 28 (though the school year is extended by 10 days). However, the increase in work represents a saving for the government (Bray, 2000: 32).

## 3. Facilities

Schools often use borrowed and rented premises to manage double-shift system. In Tanzania Community Junior Secondary Schools use premises of mainly primary public schools (Bray, 2000: 20).

Therefore, double – shift schooling can permit considerable savings in buildings, equipment, libraries, land and other facilities. A double-shift system allows two groups of pupils to use one set of facilities; and a triple-shift system allows three groups of pupils to use one set of facilities (Bray, 2000: 29).

A single–shift system might require six schools to accommodate 6,000 pupils. But a double-shift system would require only three schools.

### ***Some costs associated with double-shift schooling and solutions to cope with them:***

1. Double-shift schools require early replacement of facilities and high maintenance and reconstruction costs.

2. Double-shift operation schools need extra cupboards, storerooms and offices; they might need extra study rooms for afternoon pupils who come early or for the morning pupils who stay late.
3. In tropical countries buildings with special architecture are needed to withstand the afternoon heat. This is connected with extra costs.
4. Double-shift schools require cleaning during ‘unsocial hours’ (early in the morning or late at night). This needs extra payment for cleaners.
5. Two-shifts do not imply that school has twice the number of pupils. Administrators fill up the morning shift first and then put the ‘overflow’ in the afternoon shift. Introduction of double shifts only reduces costs by the proportion in the second shift (Bray, 2000: 31). However, the counter-argument against high maintenance costs under the double-shift system is that savings in other sectors like administration would cater for the increased maintenance costs. At the end of the day, the unit cost of maintenance would be low because students would use the same facilities for “two schools in one” (Katende, February 28, 2008). Most importantly, double-shift system caters especially for urban areas where student populations are high.

Besides, one more argument against double-shift schooling is the reduction of learning hours. However, this can be solved by maximum use of the allocated time. If time is utilized optimally, students can use the extra time to do personal reading, thereby encouraging optimum use of facilities like the library. If administered well, the morning shift can use the afternoon hours for the co-curricular studies and vice-versa, hence making learning worth the students’ time (Katende, February 28, 2008).

### ***Is double – shift schooling for rich or poor countries?***

Double – shift schooling is most common in poor countries. Financial pressures in these countries are so severe that administrators are forced to investigate all ways to minimize costs. But all administrators wish to maximize cost-effectiveness. For this reason, double shifts may also be found in rich countries, e.g. Singapore (Bray, 2000: 14).

Another example is the US. Referring to the US, Merrell (1980: 2, cited in Bray, 2000: 31) talks about new schools being built in districts with rapid population growth. The growth continues up to about 20 years and reaches peak. However, having reached the peak it starts to drop and eventually reaches 50% decrease from the peak population. School districts have tended to meet increasing number of school age children by constructing school buildings in a sufficient number and size to accommodate the peak enrollments. ‘as a result, long before the buildings are worn out school enrollments drop to a point where some of the schools are no longer needed (Merrell, 1980: 2, in Bray, 2000: 31). Merrell recommends education authorities to investigate double-session schooling and other strategies to avoid this problem. As he pointed out, ‘overbuilding to meet peak enrollments becomes an expensive course’ (Merrell, 1980: 2, in Bray, 2000: 31).

## **Educational factors**

### ***Quality***

Double – shift schooling primarily aims to extend access and minimize unit costs. But such goals are sometimes regarded to be achieved at the expense of educational quality. Thus, policy-makers are often faced with difficult choices in the design of the multiple-shift school system (Bray, 1989; Tsang, 1991: 181).

However, analysis of data on school quality suggests that the academic performance of students who attend double-shift schools is in many cases on a par with or only slightly lower than their counterparts in single-shift schools. Bray posits that double-shift systems “can permit substantial financial savings, and do not necessarily cause a decline in quality” (Bray, 2000: 82, in Herrera, 2003: 693).

In Senegal in 1982 the Ministry of Education launched a pilot double-session system at the primary level. Seven years later, evaluators of the project reported that the results of student performance in the classrooms experimenting with the double-shift system, compared to the results of regular classrooms, was positive; student scores in tested areas (reading, writing, math) were generally higher. Hence, it was concluded that reduction of the teaching time did not have adverse consequences on student learning levels, perhaps due in part to the lower student / teacher ratio (Bray, 2000: 42).

Thus, the studies suggest that the academic achievement of children in double-shift systems is often just as high as that of children in single-shift systems. Two points in favour of double shifts are worth particular stress:

- Introduction of double-shifts may permit reduction in class size and therefore a more personalized teaching approach;
- Double-shift schools are generally larger, and therefore find it easier to justify expenditure on libraries, laboratories, etc.

Indeed if these two factors weigh heavily enough, introduction of double shifts can actually improve quality (Bray, 2000: 42-43).

Sometimes double-shift schooling requires shortening of curriculum owing to the shortening of hours. However, when the curriculum is shortened following the introduction of a shift system, the core subjects are retained (language, math, science) and so one should expect achievement in them to remain high. Secondly, it is obvious that good teachers who are well supported with curriculum resources and materials can achieve a great deal more in a short time than bad teachers with few materials can achieve in twice the time (Bray, 2000: 44).

***Recommendations for retaining high quality standards in double-shift schools:***

1. Increase the number of school days to compensate for a shortened school day, e.g. double-shift schools in Senegal have 10 extra school days in the academic year.
2. Improve teaching methods through strengthened supervision and support systems, pre-service and in-service training, and better teaching aids.
3. Improve efficiency of the system by checking rural schools.
4. Encourage out of school learning, peer-teaching; increase the amount of homework; use public libraries extensively.
5. Provide at least one extra room for remedial or other courses.
6. Ensure that teachers make full use of classroom walls for display purposes.
7. Ensure that staff rooms are large enough. All staff should have their own desk.  
(Bray, 2000: 76).

***How extra-curricular activities contribute to the justification of double-shift schooling:***

Schools with large populations find it easier to justify investment in swimming pools, gymnasias, sports fields, etc. In this respect double-shift schools may actually have an advantage over single-shift schools (Bray, 2000: 45).

Therefore, extra-curricular activities should be expanded to support double-shift schools. To address the issue of shortage of teachers and keep them involved in academic work, schools could ask parents, senior pupils, or members of community to supervise extra-curricular activities (Bray, 2000: 77).

**Social factors**

As mentioned already, double-shift systems can greatly contribute to social equity, for they permit governments to increase access to education at a moderate cost. Double-shift permits higher enrolments and fewer rejections (Bray, 2000: 47).

Social justice requires double-shift systems to be operated in poor and rich communities equally (Bray, 2000: 49).

In Namibia and Zimbabwe double-shift schooling was perceived to perpetuate racial as well as class inequalities. It would have been preferable to have had the same system for schools serving all communities: rural and urban, rich and poor, and all racial groups (Bray, 2000: 50).

There are certain negative perceptions of double-shift schools in Zimbabwe. But the reason of negative attitude is poor implementation of the system rather than inherent problems in the system (Nhundu, 2000: 42-56).

However, double-shifts may contribute to problems of ‘restless youth’ and delinquency. Children are occupied in school for shorter periods and so have more time to roam around the streets and cause trouble. To tackle this problem, one recommendation could be to retain half-day schooling and use the resources saved for other social welfare programmes to help the young people be involved in extra-curricular activities (Bray, 2000: 52).

***Conclusion:***

As seen from the above discussions and assessments, it can be concluded that if wisely implemented and managed, double-shift schools can be the best way to achieve the goal of universal education in both poor and rich countries.

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