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Equity Issues in Public Examinations in Developing Countries

Vincent Greaney and Thomas Kellaghan

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Foreword

Public examinations in developing countries play a critical role in the selection of students for participation in the educational system. Examinations tend not only to dictate what is taught but also how it is taught and more importantly what is learned and what is not learned. The examinations tend to be academic, bear little reference to the everyday lives of students, are limited to pencil-and-paper tests, and are geared towards discriminating between more able students. Because of the high stakes attached to examination performance, students who leave school at an early stage are provided with inadequate opportunities to acquire relevant knowledge and skills.

This study presents for the first time an analysis of inequities associated with public examinations in developing countries. A distinction is drawn between inequities in examinations and more general inequities and inequalities in educational systems. Research from close to thirty countries mainly in Africa and Asia is reviewed.

The study identifies practices associated with examinations that may create inequities for some students. These include scoring procedures, the use of culturally inappropriate questions, the requirement that candidates pay fees,

private tutoring, examination in a language with which some candidates are not familiar, and a variety of malpractices. It notes that the use of quota systems to deal with differences in performance associated with location, ethnicity, or language group membership also creates inequities for some students. The study concludes that the limited available evidence does not indicate that examinations create inequities between genders and that ranking schools on the basis of students' examination performance may not provide a fair assessment of the work of schools.

The study should be of interest to national examination bodies, ministries of education, curriculum and research centers and national and international educational agencies. By identifying the sources of inequities it hopes to pinpoint the way to improve examination quality and ultimately the quality of instruction and learning in developing countries.

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Preface

Public examinations are an important feature of educational systems in many countries in Europe, Africa, Asia, and the Caribbean. Their importance derives largely from the fact that examination performance forms the basis of important decisions about the educational and vocational futures of students. In performing their discriminatory function, examinations have acquired a legitimacy based on the view that the qualifications they confer provide a fair indication of achievement and that the distribution of benefits on the basis of such qualifications rewards merit (see Kellaghan, 1990; Lewin & Little, 1982). However, even if one accepts that benefits should be distributed on a meritocratic basis, a range of questions still remain about the adequacy and fairness of examinations in doing this.

A number of points should be borne in mind in considering possible inequities associated with examinations in developing countries. First, it is difficult to separate inequities that might be due to examinations from more general inequalities and inequities in educational systems. The distinction between “inequality” and “inequity” is an important one. While the former describes *disproportionate conditions*, the latter implies *unjust differences*. For example, inequalities in participation rates in higher education by different social groups may reflect differences in fitness to benefit from such education, however undesirable such differences may be. If in this situation examinations contribute to the selection of students for higher education, they are only a confirmatory and publicly defensible judgment of inequalities, which may not be inequitable. A second point relating to inequities associated with public examinations is that relevant empirical data for developing countries are limited and, when available, are often not very accessible. Further, the available evidence

varies in quality. In addition to drawing on published sources, in this paper we will sometimes use information obtained in the course of our work in Africa and Asia, which has not been published. A third point relates to the generalizability of findings. Since examinations adopt different forms and may serve different functions in different societies and since there have been efforts in many countries in recent years to improve the quality of examinations, conclusions reached in the paper cannot be applied to the operation of examinations in all systems.

Following a description of public examinations, we will consider evidence relating to problems of *inequity* in public examinations in response to four major questions. First, we ask if the emphasis on discrimination in examinations creates inequities for the large number of students who will not benefit from their results. Second, we ask how equitable it is to use examination results to assess school effectiveness and to hold schools accountable. A third question asks if factors associated with the administration of examinations, in particular scoring practices and malpractice, give rise to inequities. And fourth, we ask whether the inequalities of examination success of identifiable groups are associated with inequities. For example, are the chances of success loaded unjustly in favor or against students of a particular social-class background, gender, place of residence, ethnic or language group?

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Abstract

Public examinations in developing countries play a critical role in the selection of students for participation in the educational system. The examinations tend to be highly academic, bear little reference to the everyday lives of students, are limited to pencil-and-paper tests, and are geared towards discriminating between high achieving students. Because of the high stakes attached to examination performance, teachers teach to the examination with the result that inadequate opportunities to acquire relevant knowledge and skills are provided for students who will leave school at an early stage. Practices associated with examinations that may create

inequities for some students include scoring practices, the use of culturally inappropriate questions, the requirement that candidates pay fees, private tutoring, examination in a language with which students are not familiar, and a variety of malpractices. The use of quota systems to deal with differences in performance associated with location, ethnicity, or language-group membership also creates inequities for some students. The available evidence does not indicate that examinations create inequities between genders. Ranking schools on the basis of students' examination performance may not provide a fair assessment of the work of schools.

1. Public Examinations

The origin of public examinations is to be found in the school entrance and civil service examinations of China, which go back at least to the period of the Sui emperors (589-618) (with a prehistory going back much further) and which achieved their most complex form towards the end of the Ch'ing dynasty (1644-1911) (Miyazaki, 1976). Inspired by the Chinese systems, examinations in written format began to appear in European schools in the 16th century, though it was not until some two hundred years later that public examinations of the type found in China were instituted in Europe for selection to universities, the civil service, and the professions. Public examinations are now a major feature of the educational systems of most European countries, which, in turn, passed them on to their former colonies in Africa, Asia, and the Caribbean, where they still flourish (Kellaghan, 1992). The United States, with some exceptions (e.g., the Regents' examinations in New York), has so far not adopted a public examination system. However, during the 1980s and 1990s, a number of proposals contained in reform reports, policy statements, and legislation have advocated a national system or systems of examinations for the country (Madaus & Kellaghan, 1991).

Although there is considerable variation in the form and administration of examinations from country to country (Madaus & Kellaghan, 1991; Noah & Eckstein, 1992), they generally share a number of characteristics (Kellaghan, 1993). First, the examinations are controlled to varying degrees at national or regional level (and sometimes also administered) by an agency or agencies outside the school, usually a state department of education, an examinations council closely related to the state department, or regional examining boards. Second, the examina-

tions are geared to syllabi which are usually defined by an agency outside the school, sometimes the same agency as administers the examinations. Third, examinations are usually provided in the traditional areas of the curriculum (such as mathematics, science, languages). Fourth, examinations are often formal terminal procedures, taken on fixed days under controlled conditions by all candidates taking the examination in a country or region at the end of a course of study. There is a little teacher involvement in assessing students for public examination certification in developing countries. Fifth, examinations are largely written, very often using the essay format, but sometimes making use of multiple-choice items, either in conjunction with other formats or on their own. There may also be provision for oral and practical assessments. Finally, as a result of performance on the examination, the student is awarded a grade or mark in each subject examined.

Public examinations normally are intended to serve a number of functions. The most obvious is to assess the competence of students' learning relative to some agreed standards. The results are then frequently used to discriminate among students with regard to their preferred futures: further education, admission to professional preparation, or employment. While certification is important, particularly for students who are leaving the educational system, there is often a danger of losing sight of this function because of the strong emphasis on selection. Examination results are also often used, formally or informally, to provide evidence of school effectiveness, and schools and teachers may be held accountable for their students' achievements as reflected in examination performance. This use becomes more obvious when results for individual schools are published.

It is particularly appropriate to raise the question of equity in the context of public examinations, since a reason frequently given for their introduction was to ensure an equitable distribution of educational and vocational benefits. Chinese examinations were designed to select government officials on the basis of ability and intellectual achievement rather than of birth; there were no class restrictions on examination entry, and students were not asked whether they were merchants, artisans, or peasants (Miyazaki, 1976). In Britain also, a major reason for introducing public examinations was to replace patronage and nepotism in making appointments to the civil service (Montgomery, 1965).

The use of examinations for selection for further education or employment places a heavy burden on them. The burden is particularly great in developing countries where rates of return to education are higher than in industrialized countries and educational systems are markedly pyramidal in structure: the number of students at lower grades reduces markedly as one proceeds through the grades. In many countries, there is

a public examination at three points in the system. The first is held at the end of the primary school and is used to identify the students who will proceed to secondary education. Since the number of places in secondary schools may be extremely limited, relatively few students will progress. In the mid-1980s, for example, in Sub-Saharan Africa countries for which data were available, only 31% of students in the last grade of primary school succeeded in obtaining places in the first grade of secondary school. The percentages were as low as 4 in Rwanda and 9 in Burundi (World Bank, 1990, Table A-12). The second public examination is usually held three years after entry to secondary school when the cohort is further reduced, though not as drastically as at the end of primary schooling. The final examination takes place at the end of secondary schooling, at which stage students compete for university entrance and a range of white-collar jobs. Taking all developing countries together, only about 2% of an age cohort manage to get into a tertiary institution (UNDP, 1993).

2. The Effects of Emphasizing Selection in the Examinations

The high stakes which are attached to examinations have two important consequences. The first is that achievement is defined by the examinations, since it is examination performance and not any other kind of achievement that is rewarded. And second, examinations become obtrusive rather than unobtrusive measures of student achievement (Kellaghan, 1993). Given this situation, it is important that we consider the nature of the examinations and how they might impact on learning and teaching since these might have implications of equity for some students, particularly for those who fail to be selected for further education.

Several studies of public examinations in developing countries (as indeed in developed countries) indicate that they have many limitations as instruments for assessing the achievements of students (Erfan, 1990; Hawes, 1979; Kellaghan & Greaney, 1992; Lewin & Lu, 1991; Little, 1982; Oxenham, 1983; Somerset, 1993; UCLES, 1989, 1990). First, the examinations are generally confined to the measurement of cognitive skills and for the most part measure achievement at a low taxonomic level (e.g., the recognition or recall of factual knowledge) rather than higher-order achievement (e.g., the ability to synthesize knowledge or apply principles to new situations). Second, most examinations are limited to pencil-and-paper tests, ignoring a wide range of knowledge and skills that cannot be measured by such tests. Third, when examinations are geared towards selection rather than student certification, examination questions tend to be difficult since they are designed to discriminate between higher achieving students. The more competitive the selection process, the more difficult the examinations tend to be. Finally, examinations may use culturally inappropriate items or, at best, con-

tain very little reference to the everyday life of students outside the school. For example, a 1980 English Literature examination of the West African Examinations Council featured 39 authors, only six of whom were African (Bray, Clarke, & Stephens, 1986), while in Uganda, the 1989 primary school-leaving social studies examination asked "Through which organization do the farmers in Denmark market their produce?"

Examinations with the characteristics just outlined can hardly be regarded as adequate measures of achievement. However, perhaps of even greater importance is how examinations impact on teaching (what is taught and how it is taught) and on learning (what is learned and how it is learned), translating the limitations of examinations into restricted opportunities for students to learn. These limitations are exhibited in a variety of ways (Kellaghan, 1993; Kellaghan & Greaney, 1992; Lewin & Lu, 1991; Madaus & Kellaghan, 1992; Srivastava, 1979; Uganda. Ministry of Education, 1989). First, alignment takes place between what is taught and the objectives of examinations. Simply put, things that are examined will be taught, what is not examined will not be taught or, if it is, will receive little emphasis. Second, teachers tend to emphasize cognitive skills and to neglect practical ones. Third, the curriculum is further restricted by teachers picking topics within subjects that they think are likely to appear in the examinations. Fourth, a test that focuses on isolated skill components and the recall of factual knowledge can be expected to result in similar skill components and knowledge being emphasized in the classroom (Frederiksen & Collins, 1989). Finally, considerable effort and time are invested in the development of the kind of skills which help students

do well in the examinations. There are reports that teachers teach to past examination papers and use the same types of items in their own tests and even in their teaching. The influence of examinations on teaching is not confined to examination classes but has been found in grades much lower than the ones at which examinations are taken.

A curriculum dominated by examinations (particularly ones of low quality) is unlikely to provide adequate educational experiences for students. This expectation is supported by evidence that in schools dominated by examinations a wide range of important activities, often articulated in official curricula, such as writing, oral skills, practical skills, and local languages, are neglected (see Brooke & Oxenham, 1984; Kellaghan & Greaney, 1992). Indeed, in several countries, examinations are seen as leading to the neglect of broad curriculum goals (see Baumgart & O'Donoghue, 1989; Punjab. Commission for Evaluation of Examination System and Eradication of Malpractice, 1992) and to an emphasis on rote memorization and routine drilling in class (see Brooke & Oxenham, 1984).

A further feature of curricula dominated by examinations is that they are too academic and take little account of the kinds of problems which students are likely to meet at home, in the shop, or in the market place. This is particularly important in countries where many children do not even complete primary schooling. Unless students acquire at school at least the basics of the kinds of skills which employers regard as necessary for employment—social skills and transferable cognitive skills (adaptability, problem-solving ability) (see Gunawardena, 1993)—they are not likely to have the opportunity of acquiring them elsewhere.

We should not be surprised to find that examinations which are designed to select a minority of students for further education have

low pass rates. While this is not so in all countries, high failure rates are found in several countries. In one Caribbean country, only one in three primary-school students passes the common entrance examination and, of those who proceed to secondary school, almost half fail to pass any subject in one sitting of the examination (World Bank, 1992a). In some African countries, approximately half of candidates fail to obtain an overall pass on public examinations (Kellaghan & Greaney, 1992).

A number of specific negative effects on students have been attributed to examinations in developing countries. Thus, it is stated that students who do poorly at examinations may be stigmatized as failures and become alienated from education (Kelly, 1986). In China those who fail to gain admission to university “join the grand array of workers and peasants with the self-image of being failures” (Yang, 1993c, p.17). There is also some evidence which would support evidence from Western countries that students who are unlikely to succeed in examinations may be retained in grades (Madaus & Greaney, 1985) or be “pushed out” or “drop out” of education at an early stage (Kreitzer, Haney, & Madaus, 1989). For example, Oloo (1990) has suggested that schools in Kenya with high proportions of passing students on the primary certificate examination achieve this by employing strategies to exclude students who are likely to score poorly on the examination. In China, as many as 20% of students are held back in the second grade of upper middle school in an effort to raise the level of school performance on the college matriculation examination (Wen, 1993). While it seems reasonable to assume that many students will leave school if they see no prospect of achieving the objective of schooling (a certificate), it is not possible to isolate the extent to which examinations contribute to retention or high dropout, given the many other cultural and economic factors which contribute to these practices.

3. Using Examinations for Accountability Purposes

Schools in developing countries are often evaluated in terms of students' performance on public examinations. Such evaluation is sometimes made formal (e.g., in Kenya and the Sudan) where results of national public examinations are published annually to provide the public with an opportunity of comparing schools. The publication of school results is believed to be an effective way of introducing incentive and accountability measures into the school system. In parts of China, political authorities use results of university entrance examinations as a basis for penalizing or rewarding schools (Wen, 1993).

There are several reasons, however, which suggest that ranking on the basis of public examination performance is inequitable. First, comparisons between schools generally fail to take into account differences in intake or the social or physical conditions under which schools operate. If statistical adjustments to examination results are made on the basis of students' prior achievement levels, home background, level of teacher qualifications, and availability of school resources, a very different order might emerge. Second, evidence from the United States indicates that rankings can vary depending on the school outcome that is used (Guskey & Kifer, 1990). Thus a school that does not do

well on public examinations might do very well on some other criterion. Third, whether or not adjustments are made to school output measures such as examination performance, errors in measurement on which school rankings are based are seldom if ever taken into account when judgments of merit are being made by ministries of education, the media, or the public. One United Kingdom study concluded that fine distinctions among schools on the basis of achievement test data are statistically invalid (Goldstein, Rasbash, Yang, Woodhouse, Pan, Nuttall, & Thomas, 1993). Fourth, schools can manipulate pass rates by practices, such as student retention and pressure on students to leave school before reaching the examination, which may be highly unjust to students. Lastly, the publication of results may lead to schools that are perceived to be doing well to attract students of high levels of ability, motivation, and parental support, while those that are perceived to be doing badly (even though in a real sense they may be "adding" more "value" than the perceived highly-rated schools) may be avoided by such students. Publicizing results can also lead to the transfer of more able teachers, low morale in individual schools, the creation of ghetto schools, and even in some instances school closure due to declining enrollment.

4. Administration of Examinations

In this section we consider two factors associated with the administration of public examinations that may create inequities for some students. The inequities associated with the first, scoring procedures, are less obvious than inequities associated with the second, malpractice. Further, inequities associated with the former are usually unintended while those associated with the latter are designed to create an unfair situation for some students.

Scoring

While some inequities in scoring may be attributable to influence and corruption, others may arise as a result of the vagaries of marking systems themselves. By conventional psychometric standards, scoring procedures in many countries leave much to be desired, especially from the scorer reliability perspective. Reliability (consistency) studies are seldom conducted and, where they have been (in India), unsatisfactory levels of inter-scorer reliability have been reported (Harper & Misra, 1976; Srivastava, 1979).

Apart from the issue of reliability, methods of arriving at a candidate's final score can work to the advantage of some students while penalizing others. In China, as in other countries, marks are aggregated without adjustment across subjects (Lewin & Lu, 1991). This usually results in subjects not contributing equally to the overall ranking used for selection. In such a situation, a student's ranking on a subject with a highly varied set of scores will contribute more to the overall ranking than will a subject with a less differentiated set of scores. Score variation can be pronounced; in one university entrance examination, the standard

deviation for the mathematics test results was more than twice that for Chinese language (see Lu, 1993, Table 2).

The compensation process used in a number of countries allows credits or marks that a student has achieved in one curricular area to make up for a relatively poor performance in another area. For example, in two Ethiopian public examinations, it is possible to compensate for poor performance in three key subject areas by a moderate to good performance in three less important subjects. The effect is similar to that of aggregation of marks in which the individual significance of the subject mark is lost, and with it whatever merit might be attached to requiring a minimum level of performance.

By comparison with conventional external public examinations, continuous or school-based assessment by teachers has the potential to offer a more valid assessment of student achievement since it tends to be based on observations over a lengthy time period and over a broad range of aspects of student achievement. However, the incorporation of such assessment into public examination grades is sometimes associated with inequities. In Malawi, if a teacher fails to give a grade, or fails to submit it on time, the candidate gets no grade in the examination. In Ethiopia, when teacher grades are not provided, candidates are awarded the same percentage marks for the school-based component as they achieved in the external examination. Since school-based marks are usually higher, candidates tend to be penalized by this "corrective" process. In several other countries where school-based assessment contributes to the examina-

tion grade (e.g., India, Indonesia, Pakistan, Sri Lanka), school-based marks tend to be inflated due to the nature of the continuous assessment process, local pride, parental pressure, and in some instances threats. Thus, individual students' final rankings will depend on the extent to which individual teachers succumb to non-achievement related influences.

Given the subjective nature of the marking process in public examinations and a presumably low level of reliability, one might expect that challenges to examination results would be allowed so as to deal with possible inequities. In fact, the facility to challenge results varies from country to country and nowhere is it encouraged. In some countries (e.g., Sudan), appeals are not accepted. In others (e.g., Lesotho), appeals are allowed on payment of a fee. Others place severe restrictions on appeals; Swaziland, for example, limits appeals to one subject per school on any occasion and to the work of not more than six candidates in that subject. Part of the reason for restricting appeals is the high cost involved and the tendency to abuse the system.

Malpractice

Equity and validity considerations require that no candidate for a particular public examination is granted an unfair advantage over other candidates. An unfair advantage would be obtained, for example, if a student had prior access to an examination paper or received support from an external source during the course of the examination. Malpractice (also termed misconduct, use of unfair means, irregularity, and cheating) can be expected when high stakes are attached to test performance. It occurs in the United States among students taking the Scholastic Aptitude Tests (Haney, 1993) and probably in every other country throughout the world. In developing countries, extensive malpractice, including bribery, threats,

physical abuse, and a variety of ingenious methods to gain an unfair advantage serve to highlight the importance of public examinations in the lives of students and of their families.

Based on his experiences as Secretary of the Uganda National Examinations Board, David Ongom (1990) identified eight major types of malpractice: leakage (confidential information disclosed to candidates by examination officials, questions setters, or supervisors); impersonation (a non-candidate takes the examination for a registered candidate, sometimes with the full knowledge of the supervisor); external assistance, the most common type of malpractice, accounting for 59% of all cases detected in Uganda from 1987 to 1989 (involving supervisors who write the answers on the board, markers who alter initial scores, or computer operators at the examination board); smuggling of unauthorized material (including textbooks and written notes into the examination hall); copying from a nearby candidate; collusion (two or more candidates exchange information during the examination); substitution of scripts (scripts written during the examination are exchanged with ones written either before the actual examination or afterwards) sometimes with the collusion of school administrators or examination board officials; irregularity (supervisors may alter the amount of time allotted for a particular paper or substitute materials for those prescribed in practical examinations).

The issue of malpractice has become so predominant in Pakistan that for examination officials the concept of examination quality appears to relate only to the question of security. A Punjab Commission for Evaluation of Examination System and Eradication of Malpractices (1992) concluded that

Cheating in the examination now knows no bounds... Those who dare and those

who wield any kind of authority can do ANYTHING (sic) they want during examinations, without any fear of punitive action... Leaked papers, answer books, continuation sheets, and solved examination questions were freely available at a price... Chairmen of BISEs (Boards of Intermediate and Secondary Education) (are) completely helpless to take action against the defaulting examinees and corrupt subordinates and (are unable) to resist threatening dictates of some bureaucrats, public representatives and gangsters (pp.59-60).

A recent report on malpractice in India noted that "while teachers looked on helplessly in the classrooms and police looked on diffidently ... dozens of brothers and sisters, fathers and cousins stood outside a government school ... hurling rockpropelled answer sheets to students" (Moore, 1993, p. A 14). The answer sheets had been obtained through bribery. The author concluded that "schools where cheating is not reported make newspaper headlines" (p.A 14). Newspapers in Bangladesh have also featured articles on corruption and malpractice in the conduct of public examinations (UCLES, 1989).

In the context of widespread malpractice, it is not surprising that a review of 29 separate reports and policy papers in Pakistan concluded that public examinations "had become devoid of validity, reliability and credibility" (Erfan, 1990, p.44). Perhaps most serious of all is the disincentive to learn that results from the realization that examination success can be bought. If this is so, the conclusion of a Commission established in the Pakistan province of Punjab that the examination system had contributed to a lowering of educational standards should not surprise us (Punjab. Commission for Evaluation of Examination System and Eradication of Malpractices, 1992).

Given the amount of malpractice associated with public examinations, it is to be expected that, despite the obvious educational advantages of school-based assessment, examination bodies in many developing countries have little confidence in marks derived from such assessments. For example, school-based assessment was doomed in Sri Lanka when evidence was produced of work being done by paid outsiders and of unfair advantages for well-equipped schools and wealthy students (Kariyawasam, 1993; UCLES, 1990). In China, the present experiment which permits a small percentage of "meritorious" students to gain admission to college or university on the basis of school recommendation needs to be examined for possible bias and malpractice (Hao, 1993).

Efforts to combat or detect malpractice include overseas printing of examination booklets and answer sheets in Bangladesh (UCLES, 1989) and in Kenya (McGuinness, O'Donoghue, Yussufu, & Kithuka, 1990), administration of oaths of secrecy in Zambia (Kellaghan, Martin, & Sheehan, 1989), requiring examination setters to reside in a hotel for two months without outside contact in China (Lewin & Lu, 1991), comparisons of scripts where copying is suspected, and acting on reports of cheating by other candidates in Uganda (Ongom, 1990).

In the long term, efforts to lessen the extent of malpractice will depend on the level of political and legal support that is forthcoming. Since in some cases, politicians influence the appointment of senior examination board employees (e.g., in Pakistan), and have been able to exact favors for their patronage, the task of bringing about the necessary reforms through the political process is likely to be difficult. Legal sanctions for malpractice in relation to public examinations already exist in many countries; police and judicial authorities, however, tend to show a marked reluctance to enforce them. In a notable exception to this trend, in 1993 one exami-

nation board in Lahore, Pakistan enlisted political and police support to lessen the extent of malpractice. The initiative was accompanied by announcements in the media and, in particular, by careful recruitment of examination supervisors. The sharp drop in pass rates on two public

examinations suggests that the campaign had a significant impact. Between 1992 and 1993 the pass rates on the secondary school examination fell from 73.3% to 29.2%, and on the intermediate examination from 34.6% to 17.5% (Ahmed, 1994).

5. Inequities Affecting Groups of Students

It is common in Western countries to consider inequities in the educational progress of students that are associated with such factors as gender, socioeconomic status, location, ethnicity and language group membership. While differences in participation rates and in achievement related to these factors exist in developing countries also, evidence on the extent to which examinations contribute to them is very limited and the role of examinations is often confounded with the role of other variables. Gipps and Murphy (1994) provide evidence from a number of studies in industrialized countries of differences in performance on public examinations between boys and girls and between students from differing ethnic and social groups. While the extent to which assessment procedures might have contributed to differential sub-group performance is not clear from the studies, Gipps and Murphy (1994) suggest that learnt behaviors and expectations of sub-groups might affect their reactions to methods of measurement, which in turn may lead to mis-representation of their achievement.

Gender

In some countries, boys perform better than girls on public examinations. For example, in the Sudan, in each year from 1980/81 to 1989/90, boys recorded higher pass rates than girls in the primary school leaving and intermediate examinations, even though there were more male than female candidates (Greaney, 1991). In Zimbabwe, boys also perform significantly better than girls, especially in mathematics and science. In many cases, the pass rate of boys is twice or three times that of girls (World Bank, 1992b). Similar situations are found in Tanzania (Drenth, van der Flier, & Omari, 1983;

TAGRED, 1989), in Kenya (Olekambaine, 1991), and in Malawi (Gordon, 1988). A more recent Kenyan study (Appleton, 1993) showed that although boys outperformed girls on the Kenyan Primary School Certificate Examination, pupil gender alone accounted for less than 1% of the variation in examination score performance. Examples of girls outperforming boys on examinations are found in Mauritius (World Bank, 1985) and in Caribbean countries (World Bank, 1992a). In some countries (e.g., Ethiopia), little or no gender differences are found (Abraha, Beyene, Dubale, Fuller, Holloway, & King, 1991).

Several reasons have been advanced for girls' lower participation and achievements where they occur. These relate to cultural and religious beliefs regarding gender roles, demands on girls to work outside school, conflicting role expectations for girls, particularly at adolescence, and the social organization and quality of schooling (involving, for example, the use of physical punishment, the provision of certain subjects on a gender-biased basis, and a predominance of male teachers) (Abraha et al., 1991; Herz et al., 1991; Manase & Kisanga, 1978; Olekambaine, 1991).

We would need other data on achievement to conclude that differences in examination performance between males and females could or could not be attributed to the character of examinations. Such data are not readily available. Some recent evidence from Zimbabwe, however, suggests that the superior performance of boys on examinations may be related to the nature of the examinations. No gender differences, however, were found for grade 6 Zimbabwean students on performance on any of the

three domains of the IEA (International Association for the Evaluation of Educational Achievement) reading literacy assessment (Murimba et al., 1994).

In the belief that examinations contribute to differences in gender performances, action is being taken in some countries to deal with the issue. For example, in Zambia the consistency of gender differences at all levels, in every subject, and in every province has led to the introduction of gender appraisal criteria in the development of textbooks and in the setting of examination questions.

Socioeconomic Status

The preoccupation in Western countries with the extent to which educational systems reflect and reproduce social-class structure is not found in developing countries. There has, however, been a limited amount of research in the area and this has produced contradictory findings. Some studies have replicated the findings in Western countries (e.g., Lockheed, Fuller, & Nyirongu, 1989; Robinson, 1993) on the relationship between socioeconomic background and achievement, while others have not (Heyneman & Loxley, 1983). It may be that the results reflect differences in the cultural conditions of countries. The failure to find a relationship may also be due to limited variation in the variable representing parental education and occupation, the use of inappropriate measures of home background, or absence of the class differentiation that characterizes Western societies. When indicators of the material, social, and psychological aspects of home backgrounds are used (e.g., parental values and press for the child to achieve), one is more likely to find a relationship between home background and school achievement (Lockheed, Fuller, & Nyirongu, 1989).

Evidence on the relationship between home

background and public examination performance is even more limited than evidence involving other measures of achievement. In this context, the relationship between meritocracy and the civil service examination of imperial China has received attention. Based on preliminary research of the imperial dynasties, Wittfogel (1938) concluded that the ruling officialdom largely reproduced itself through the civil service examinations system. However, analysis by Ho (1964) of statistical data on the educational and economic backgrounds of 40,000 Ming-Qing examination graduates, indicated that the examinations acted as a channel of mobility and as a politically and socially stabilizing factor (see also Kracke, 1968; Lee, 1985). What can be generalized from these enquiries is that civil service examinations provided mobility for a large number of people from non-official and poor commoners' family backgrounds. However while there was also some evidence of downward mobility, many families of wealth and power managed to maintain their positions in the social hierarchy through generations.

In a recent study in Mauritius, significant differences in performance on the primary school-leaving examination were found to be associated with the socioeconomic status of pupils' parents and the availability of extra educational facilities, such as reading materials and frequency of tuition outside school (Manrakhan, Vasishtha, & Vadamootoo, 1991). In Tanzania also, correlations between home background (occupational level of family, material facilities in home) and performance on the school leaving examination at the end of primary schooling and on a public examination at the end of the junior cycle of secondary school were found to be modest (Drenth et al., 1983).

Even though socioeconomic background may not be strongly related to examination performance, politicians are aware that including criteria other than, or in addition to, examination

performance will alter the social-class composition of the selected group. Thus, in Mozambique, in selecting students for lower and middle secondary school, social-class origin is taken into account as well as examination results to increase the representation of children of peasants and manual workers (Robinson, 1993). Evidence from China also indicates that changing selection criteria can affect the selection of students from different backgrounds. In China, Mao Zedong abolished entrance examinations and introduced three criteria for selection to university based on intellectual, moral, and physical achievements. During the Cultural Revolution, the intellectual domain tended to be deemphasized and admission to university was based on a minimum of two years work experience "supported by the sponsorship of peer-group judgement of proletarian consciousness" (Little, 1992, p.4). The effect of this was to increase the probability of students from lower social-class backgrounds gaining admission to university (Beemer, 1993). Following the reintroduction of entrance examinations in 1976 and an increase in emphasis on intellectual achievements, this probability decreased.

There are two other factors associated with public examinations which seem relevant in considering possible inequities associated with socioeconomic background. The first relates to fees which students have to pay to sit for an examination and the second relates to the provision of tuition outside school for students.

Policies regarding examination fees vary from country to country. Frequently nominal fees are charged at the primary level; at the secondary level they can be sizeable and sometimes beyond the means of families. In Lesotho, for example, the fee for the secondary school-leaving examination was considerably greater than the average monthly wage in the country (Kellaghan & Greaney, 1992). We do not have any evidence, however, on the extent to which

examination fees deter some students from sitting for examinations but it is not unreasonable to suspect that it is a consideration for poorer families.

Given the high stakes attached to public examination performance, it is not surprising to find that in many countries, parents who can afford it seek additional private tuition for their children. In Sri Lanka, up to 71% of students attend tutoring classes outside school, occupying, on average, 9.1 hours of students' time each week (Gunawardena, 1993). In Mauritius, where tutoring is also common, those who avail of it come from better-off families (Baumgart & O'Donoghue, 1989). It is unlikely that tutoring would be so popular if it were not attended by success. Thus, the less well-prepared children of parents who cannot afford it are clearly placed at a disadvantage in the examination contest.

Location

Particular parts of a country (often remote rural areas) are frequently associated with a number of disadvantages—low level of income, shortage of places in school (particularly at secondary level), and provision of education in a language that is not widely used in the area. Often the children of rural families receive no education at all. It has been estimated that less than half of all rural children in most developing countries and as few as 10% in many countries complete four or more grades in school (Anderson, 1988). In Tunisia, enrollment of girls is particularly depressed in rural areas (Thourson Jones, 1980).

Differences in achievement between urban and rural children, in favor of the former, are a feature of educational systems throughout the world but are most pronounced in less developed countries (Elley, 1992). Performance on public examinations reflects these differences.

For example, the pass rate on the primary school-leaving examination in Madagascar has been found to be approximately 60% for candidates living in cities and as low as 20% for rural candidates (Kellaghan & Greaney, 1992). What is relevant from the point of view of inequities associated with examinations is whether or not examinations are likely to underestimate the achievements of rural students. An analysis of examination papers would suggest that the answer to this question must be "yes". For example, a comprehension passage from a university entrance examination in one of the lowest income countries in Asia read "Today we have machines for everything for washing clothes and washing dishes and mechanical apparatus for cooking and cleaning." Questions based on this passage (e.g., "Can you be sure of the changes machines will bring in the lives of future generations? Give reasons.") would most likely have placed students from rural (and indeed all children from less-privileged backgrounds) at a disadvantage since they would have no direct experience of the world of machines (Somerset, 1993).

Problems of inequity may also arise when examination authorities in a country operate on a regional basis or when different cut-off points for passing are applied in different regions. Where a number of examination authorities exist within a country, a candidate's likelihood of gaining admission to university may depend on where the candidate lives. This situation is exemplified in the Punjab province of Pakistan, which has eight separate boards which operate different grading standards. The resultant inequity is underlined by the fact that students who gain admission to university on the basis of examinations scored by one of the more lenient boards have substantially higher first-year failure rates than those from regions served by boards with more rigorous marking standards (Punjab. Commission for Evaluation of Examination Systems and Eradication of Malprac-

tices, 1992). In China also, where no moderation of examinations exists between the provinces, a candidate's chances of success in the university entrance examination may depend on location (Lewin & Lu, 1991).

Different pass marks for different regions are sometimes introduced to overcome differences in examination performance due to disadvantage associated with location or ethnicity. In China, currently consideration is being given to using geographical quotas to allocate college-university places (Hao, 1993). Ironically, this practice can result in a new form of inequity. In Sri Lanka, where there is a long tradition of the use of quota systems to overcome social inequities, candidates who do not obtain admission to university in one location would have qualified had they resided in another area (UCLES, 1990). A somewhat similar situation operates in Ethiopia, where all regional offices are instructed to use the same percentile rank selected nationally as the passing level. The effect on the examination in 1987 was that while the passing raw score in Eritrea was 42, in Gojam it was as high as 47 (O'Donoghue, Reilly, & Greaney, 1989). Thus, in Ethiopia, as in Sri Lanka, efforts to correct inequities based on place of residence result in inequities for other students.

Type of School

The contribution of the school to pupil achievement, relative to that of the home, seems to be much greater in developing rather than in developed countries (Heyneman & Loxley, 1983). In developing countries, schools frequently lack trained teachers, teachers who have an adequate command of the language of instruction or the pupils' home language, textbooks, desks, adequate lighting, and especially at the secondary level science equipment. In China, where passes in specified elective subjects are required for certain fields of study at the university level, only a small number of middle

schools are able to provide a broad range of elective subjects for students preparing for university entrance examinations (Yang, 1993b).

Ethnicity

The public examination system in a number of countries has been used to favor one ethnic group at the expense of others. In Malaysia, selection of tertiary entrants is carried out centrally by the Ministry of Education using criteria which are not publicly known but favor the Bumiputras (Tzannatos, 1991). In Fiji, the university entrance examination run by the South Pacific Board of Examination and Assessment was replaced partly in an effort to boost the relatively poor pass rate of Fijian as compared to Indian candidates.

Sri Lankan experience highlights the difficulty of operating quota systems along ethnic lines (UCLES, 1990). At one time, the number of university places awarded to Sinhalese and the Tamil minority group was determined by reference to population ratios and, within each group, on the basis of examination performance. This procedure was strongly resisted by the Tamil group who would have obtained substantially more places had a non-quota system been adopted. Since the mid-1970s the system has been changed; currently the top 30% is based on all-island merit list, a further 55% based on a district quota system, while a final 15% has been reserved for specified underprivileged areas (Kariyawasam, 1993).

Language Group

The issue of language is much wider than that of examinations. It is not unusual for children in developing countries to be educated through a language which they do not speak at home and in which their proficiency may be very limited. In fact, in Africa, for the majority of students, the language of instruction in second-

ary schools is not their mother tongue (Kellaghan & Greaney, 1992). While this practice may be described as "one of the most prevalent forms of discrimination in the classroom" (Lockheed, Verspoor & Associates, 1991, p. 166), there are good reasons why it exists. Where there are a large number of language groups in a country—a not uncommon situation—the use of a single language for instruction brings some uniformity to the system. Further, the language that is chosen for instruction (especially at the upper primary- and secondary-school levels) is usually one that has international value, an important consideration in dealing with secondary school curricula and in preparing students for higher education.

While these reasons might suggest the use of a language other than that of students' homes for instruction, there are also serious disadvantages associated with the practice. Not surprisingly, there is evidence that children who speak the language of the school at home have a distinct advantage at school (Elley, 1992). In Latin America, school repetition rates tend to be much higher for students who do not speak the "national" language (Schieffelbein, 1992). There is also evidence that children who are educated at primary school in their home language are severely disadvantaged in secondary school when the medium of instruction is different (Cooksey, 1986).

Are students further disadvantaged through having to take examinations in a language other than their home language? If the purpose of an examination is to determine students' level of achievement in a subject other than the language itself (e.g., mathematics, science, history), then the answer would appear to be "yes". A number of commentators have attributed low levels of achievement in public examinations to the language difficulties of students, pointing out that students with a limited knowledge of a language will inevitably be

handicapped in their ability to demonstrate in examinations the knowledge and skills they have acquired (Eisemon, 1990). In Mauritius, for example, where the lingua franca is Creole, some candidates' poor examination perfor-

mances have been attributed to a failure to understand questions set in English while low pass rates in Madagascar have been attributed to the extensive use of French in the educational system (Kellaghan & Greaney, 1992).

6. Discussion

It is difficult to separate the possible contribution of public examinations in developing countries to the many inequalities which, by Western standards, exist in educational systems. Such inequalities for the most part are a direct result of limited economic resources which exhibit themselves in some countries in a severe shortage of space to accommodate children in school. In this context, examinations assume an extraordinary importance, since for most children they hold the key to educational and occupational advancement.

While the evidence is limited, we found some indications that inequalities and inequities may be associated with public examination systems. First, the pronounced impact of the examination on the teaching-learning process results in a situation in which the educational needs of the majority of students who do not progress to the next highest level tend to be ignored. Second, the use of examination results to rank schools is likely to lead to unfair judgments about the performance of teachers and schools. Third, inequities for students arise from some scoring practices and malpractices in the administration of examinations. We do not have evidence that examinations create inequities between genders or that they strongly favor one socioeconomic group over another. However, if we consider questions asked in examinations, we are forced to the conclusion that some favor higher socioeconomic groups. Further, it is likely that the requirement that students pay fees to take examinations and the importance of private tuition outside school in preparing students for examination works to the disadvantage of students from poorer homes. A stronger relationship between achievement on examinations and

socioeconomic status may emerge as participation in schooling becomes less selective.

Differences in performance on examinations associated with location, ethnicity, or language group membership may not be directly attributable to the nature of examinations. Quota systems to redress consequent imbalances, however, inevitably mean that some students who perform relatively well on examinations fail to be selected because of such factors as the area in which they live or their ethnicity.

The fact that high-stakes examinations will impact on teacher behavior and student learning in whatever country the examinations are held means that the nature of the examination and its influence on the classroom merit serious consideration. Although the relationship between test quality and the quality of students' educational experience is probably more complex than is normally assumed (Alderson & Wall, 1993), there is considerable evidence that the shortcomings of examinations (e.g., inadequate curriculum coverage, limitation of questions to recall and recognition of factual information) are readily translated into the curricular experience of students. It is probably fair to say that in developing countries, where the main function of examinations is to select students, their impact on teaching and learning is largely unintended. An appreciation in some countries that examinations, because of their poor quality, may negatively impact on students' school experience has led to attempts to improve examination quality either by broadening the range of topics that are examined (e.g., to oral, aural and practical skills) or by including material that relates to farming, health, and childcare and is

more relevant to the needs of the majority of students who will terminate their education after they take the examination (see Eisemon, 1990; Postlethwaite & Thomas, 1980; Somerset, 1987). These developments might be interpreted as reflecting an appreciation of the need for more “authentic” testing, a topic in which there is considerable interest in the United States at present.

Despite the presence of entrenched examination traditions, a general lack of research and evaluation of the effects of examinations and administrative demands created by ever-increasing candidate numbers, some efforts are being made to reform present public examination systems in the interests of improving pupil learning and introducing equity. Kenya uses examination results to provide detailed feedback including

model answers to each school to enable teachers to improve instruction (Somerset, 1987). In China, separate selection and certification tests, introduced in Shanghai and Zhejiang at the end of middle schools, have led to an increased emphasis on the academic needs of the majority of students instead of the minority destined for university entrance (Yang, 1993a). Recent efforts to eliminate the use of “unfair means” and malpractice in Pakistan suggest that political will, supported by the legal and educational authorities, can result in factors such as pupil ability and application (rather than parental influence and intimidation) affecting the outcome of public examinations. Initiatives such as those, coupled with an increase in awareness of the importance of research into examinations, hold out some hope for reducing the present unacceptable level of inequity associated with public examinations.

7. References

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