

# KEYNOTE ADDRESS

## CONSTRUCTING KNOWLEDGE SOCIETIES: NEW CHALLENGES FOR EDUCATION

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### **Citation**

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### **Abstract**

Technology is dramatically changing the knowledge being produced in the world today. The changes, which could be as fundamental as was the introduction of blackboards into classrooms two centuries ago, will test education systems in developing countries. This keynote address considers the importance of new applications of knowledge, the continuous restructuring of education systems in response, especially at the tertiary level, and the challenges that developing countries and their donors face as a result of these changes.

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### **Introduction**

Because this event organized by USAID is so important, I felt very nervous before coming and had some hesitations about what to present to this distinguished audience. So I went to consult a fortune teller about the future of education in the age of knowledge. This is what she told me. In the school of the future, professors and students will be greeted by a robot receptionist. Incoming students will receive a free Ipad, a Blackberry, a laptop and bicycle, or they will be able to buy a desktop for \$1. Low income students in need of financial aid will log onto Ebay to participate into scholarships auctions. In the school of the future, there will be no physical library or laboratories, only i-labs and e-libraries. Students who graduate on time will receive a \$500 cash reward. School principals will communicate daily with their students through SMS addressed to their cellular phones. At the university level, each student will have an individualized program; most students will enroll in at least two if not three institutions and get credits towards their degree. The validity of degrees will be only five years; courses will be redesigned every three year. Most courses will be online, through dynamic interaction with cognitive tutors based on artificial intelligence software. Many of the courses will be sub-contracted to private firms. Graduates who do not find a suitable job within six months of graduating will be reimbursed the cost of their studies. Public universities will receive only 10% of their resources from the government budget. A university president will earn more than a million dollars a year. To stimulate institutional responsiveness and relevance, the president will tax each university department at the beginning of the academic period and award the most innovative department a one million dollar prize at the end of the period. Professors will receive a bonus based on the labor market outcomes of their students. The most sought after program will not be the MBA anymore but the Master in Fine Arts recognized for the critical creativity skills imparted to future industry leaders.

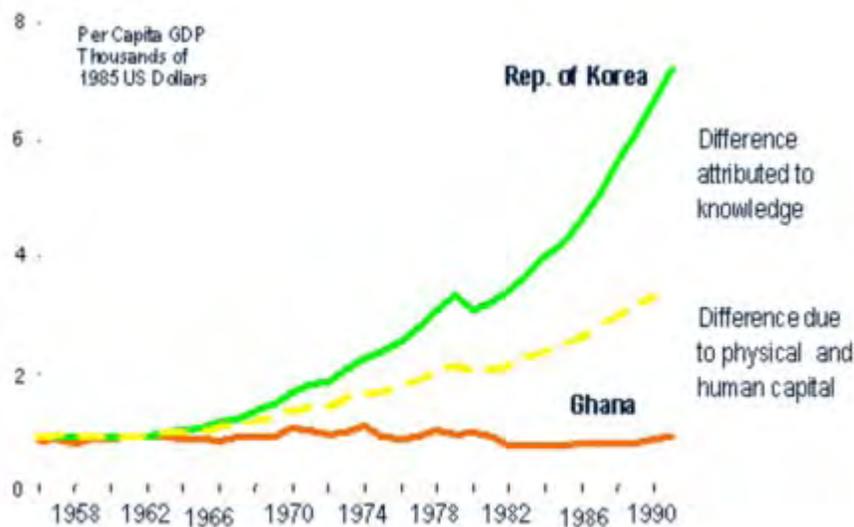
If you think that these are stories of science fiction, the fact is that all these examples are real life

cases that symbolize the revolution that education is confronting today. And the question we need to ask ourselves, those of us who work on supporting education progress in developing countries, is “Are their education systems prepared to face these dramatic changes?” This paper will consider four aspects to this question: (1) the importance of knowledge for developing countries and the role of education in that context; (2) the changes in education and training needs; (3) the implications for education systems all over the world; and (4) the implications for the way donor agencies operate in support of education development.

### Importance of Knowledge

It is recognized widely that economic development is increasingly linked to the ability of a country to acquire and apply knowledge. A few years ago, some of my World Bank colleagues compared two countries, South Korea and Ghana, which in the late 1950s had the same level of economic development. Today we know how much progress South Korea has achieved, while Ghana has not advanced that much, unfortunately. One could say simply that it is because Ghana is poorer than Korea. But what my colleagues did was to estimate where Ghana would be today if it had benefited from the same endowment of capital and labor inputs, as shown on the middle (yellow) line of the attached graph. The difference between the top (green) and the middle (yellow) lines on the graph is attributed to the fact that South Korea has been able to acquire foreign technology and then develop and apply its own technologies over the years. Some of you may own a Samsung cellular phone or a LG television or drive a Hyundai. Ghana, by contrast, does not boast similar technological advances.

Knowledge as a Factor in Income Differences between Countries: Ghana and the Republic of Korea, 1956–90



Source: World Development Report 1998/99: Knowledge for Development. New York: Oxford University Press: 22.

Knowledge is also important to solve the type of environmental problems that plague many cities all over the world. Knowledge is also important to deal with safety issues. In 1985, for example, a scientist warned the Colombian government that the extinct volcano called Nevado del Ruiz was in fact showing some signs of activity and might erupt anytime. No one paid attention to his warnings. Three months later, there was an eruption; the lava melted the snow which capped the mountain and created a river of mud which traveled a hundred kilometers within a few hours and destroyed the city of Armero where about 20,000 people died. With today’s scientific advances in

the fields of seismology, vulcanology and climatology, there is no excuse not to be better prepared. The terrible impact of both the Asian Tsunami on December 26, 2005 and more recently the Katrina Hurricane in Louisiana in the U.S. are sad illustrations of what happens when governments are not well prepared and do not heed the advice of scientists. Finally, countries need to have the capacity to understand global issues such as the avian flu epidemics, global warming, stem cell research or the application of genetically modified crops.

A last point to mention is the acceleration of the speed of knowledge creation, which has serious implication for what and how we teach in schools and universities. Learning facts is becoming less relevant than learning to search for the right information.

### **Changing Education and Training Needs**

What is happening in the labor market? How are the education and training needs of firms evolving? The first observation is that, on average, *there is a demand for higher skill levels*. Statistics from the OECD show that, in all member countries and for both male and female, the gap in earnings between the tertiary and the lower levels of education has grown even though the supply of graduates has increased, reflecting the higher demand for college and university graduates. Similar statistics are available for a number of developing countries such as India, the Philippines, Brazil, Mexico and Argentina.

A second, related dimension of change is the *need to train young people to be flexible and to acquire the capacity to adapt easily to a rapidly changing world*. Recent research carried out by Levy and Murnane on the skills requirements for the tasks performed in the US labor market shows the types of skills for which there is less demand or that have been taken over by computers and those for which there has been increased demand.<sup>1</sup> In their path-breaking study, the authors divided the tasks performed in firms into five broad categories:

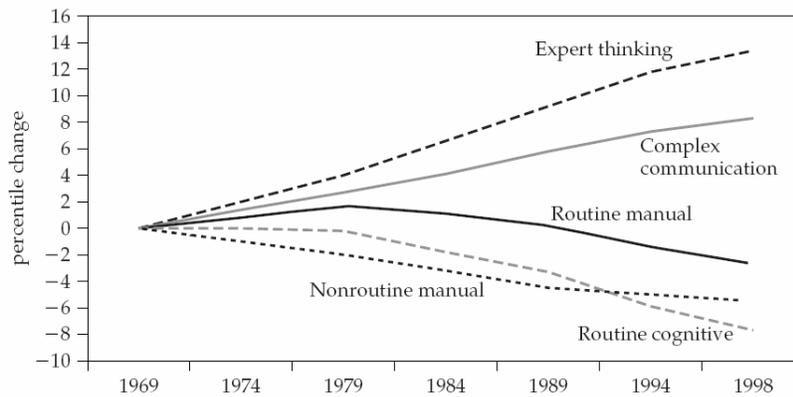
- *Expert thinking*: solving problems for which there are no rule-based solutions, such as diagnosing the illness of a patient whose symptoms are out of the ordinary;
- *Complex communication*: interacting with others to acquire information, to explain it, or to persuade others of its implications for action; for example, a manager motivating the people whose work he/she supervises;
- *Routine cognitive tasks*: mental tasks that are well described by logical rules, such as maintaining expense reports;
- *Routine manual tasks*: physical tasks that can be well described using rules, such as installing windshields on new vehicles in automobile assembly plants; and
- *Non-routine manual tasks*: physical tasks that cannot be well described as following a set of “if-then-do” rules and that are difficult to computerize because they require optical recognition and fine muscle control; for example, driving a truck.

The figure below shows trends for each type of task. Tasks requiring expert thinking and complex communication grew steadily and consistently during the 1970s, 1980s, and 1990s. The share of the labor force employed in occupations that emphasize routine cognitive or routine manual tasks remained stable in the 1970s and then declined over the next two decades. Finally, the share of the labor force working in occupations that emphasize non-routine manual tasks declined throughout the period.

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<sup>1</sup> Levy, Frank, and Richard Murnane (2004). *The New Division of Labor: How Computers Are Creating the New Job Market*. Princeton, NJ: Princeton University Press and Russell Sage Foundation.

### Economy-wide Measures of Routine and Non Routine Task Inputs United States, 1969–98



Source: Levy and Murnane (2004), p. 50, figure 3.5.

Note: Each trend reflects changes in the numbers of people employed in occupations emphasizing that task. To facilitate comparison, the importance of each task in the US economy is set to zero in 1969, the baseline year. The value in each subsequent year represents the percentile change in the importance of each type of task in the economy.

The third dimension of change in education and training needs is *the growing importance of continuing education* needed to update knowledge and skills on a regular basis because of the short “shelf life” of knowledge. At the post-secondary level, for instance, the traditional approach of studying for a discrete and finite period of time to acquire a first degree or to complete graduate education before moving on to professional life is being progressively replaced by practices of lifelong education. Training is becoming an integral part of one’s working life, and takes place in a myriad of contexts: on the job, in specialized higher education institutions, or even at home.

Lastly, an important consequence of the acceleration of scientific and technological progress is the diminished emphasis in tertiary education programs on the learning of facts and basic data *per se*. There is a growing importance of what could be called *methodological knowledge* and skills, i.e. the ability to learn in an autonomous manner. Today, in many disciplines, factual knowledge taught in the first year of university study may become obsolete before graduation. The learning process now needs to be increasingly based on the capacity to find, access and apply knowledge to problem-solving. In this new paradigm, where learning to learn, learning to transform information into new knowledge, and learning to transfer new knowledge into applications is more important than memorizing specific information, primacy is given to information seeking, analysis, the ability to reason, and problem-solving. In addition, competencies such as learning to work in teams, peer teaching, creativity, resourcefulness and the ability to adjust to change are also among the new skills which employers value in the knowledge economy. The following remarks by Professor Anthony Komaroff from the Harvard School of Medicine<sup>2</sup> suggest how many skills are required to do a job well.

*To be a good doctor, you have to know a lot of facts. Medical training does a very good job of teaching those facts. But a good doctor also needs to have many other skills: to keep up with an ever changing body of medical knowledge; to efficiently find information that it is not possible to memorize; to learn how to make decisions such as how to balance the benefits of a test or treatment against its risks; to sense a patient’s unexpressed fears or*

<sup>2</sup> Quoted in *Newsweek*, 12 December 2005, p. 84.

*misunderstandings; to elicit a patient's wishes; to explain things clearly, and, above all, to care. It is a lot harder to teach these skills than to give medical students facts to memorize. At our medical school and, at many others the curriculum is being changed to emphasize such skills.*

## **Changing Education Systems**

### ***New Forms of Competition at the Tertiary Education Level***

The decreased importance of physical distance means that the best universities in any country can decide to open a branch anywhere in the world or to reach out across borders using the Internet or satellite communication links, effectively competing with any national university on its own territory. With 90,000 and 500,000 students respectively, the [public] University of Maryland University College and [private] University of Phoenix have been the fastest growing distance education institutions in the US in the past five years. It is estimated that, in the US alone, there are already more than 3,000 specialized institutions dedicated to online training. Thirty-three states in the US have a statewide virtual university. Distance education is sometimes delivered by a specialized institution set up by an alliance of universities, as is the case with Western Governor University in the US and the Open Learning Agency in British Columbia. In Thailand and Turkey, the national open universities enroll respectively 41 and 38 percent of the total student population in each country.

Corporate universities are another form of competition with which traditional universities must increasingly reckon, especially in the area of continuing education. It is estimated that there are at approximately 1,600 institutions in the world functioning today as corporate universities, up from 400 ten years ago.

Franchise universities constitute a third category of new competitors. In many parts of the world, but predominantly in South and Southeast Asia and the formerly socialist countries of Eastern Europe, there has been a proliferation of overseas "validated courses" offered by franchise institutions operating on behalf of British, US, and Australian universities. One-fifth of the 80,000 foreign students enrolled in Australian universities are studying at offshore campuses, mainly in Malaysia and Singapore.<sup>3</sup> The cost of attending these franchise institutions is usually one-fourth to one-third what it would cost to enroll in the mother institution.

The fourth form of unconventional competition comes from the new "academic brokers," virtual entrepreneurs who specialize in bringing together suppliers and consumers of educational services.

### ***Changes in Structures and Modes of Operation***

Faced with new training needs and new competitive challenges, many universities have undertaken important transformations in governance, organizational structure and modes of operation. A key aspect has to do with the ability of universities to organize traditional disciplines differently, taking into consideration the emergence of new scientific and technological fields. Among the most significant ones, it is worth mentioning nanotechnology, molecular biology and biotechnology, advanced materials science, microelectronics, information systems, robotics, intelligent systems and neuroscience, and environmental science and technology. Training and research for these fields

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<sup>3</sup> Bennell, Paul, and Terry Pearce. 1998, *The Internationalization of Higher Education: Exporting Education to Developing and Transitional Economies*. IDS Working Paper 75. Institute of Development Studies, University of Sussex, U.K.

require the integration of a number of disciplines which have not necessarily been in close contact previously, resulting in the multiplication of inter- and multidisciplinary programs cutting across traditional institutional barriers.

The evolution towards lifelong learning means that young high school graduates will gradually cease to be the primary clientele of universities. As a result, universities must organize themselves to accommodate the learning and training needs of a very diverse clientele: working students, mature students, stay-at-home students, traveling students, part-time students, day students, night students, weekend students, etc. One can expect a significant change in the demographic shape of tertiary education institutions, whereby the traditional structure of a pyramid with a majority of first degree students, a smaller group of post-graduate students, and finally an even smaller share of participants in continuing education programs will be replaced by an inverted pyramid with a minority of first time students, more students pursuing a second or third degree, and the majority of students enrolled in short-term continuing education activities. Already in the US, almost half of the student population consists of mature and part-time students, a dramatic shift from the previous generation.

Tertiary education institutions are also changing their pattern of admission to respond in a more flexible way to growing student demand. In 1999, for the first time in the US, a number of colleges decided to stagger the arrival of new students throughout the academic year, instead of restricting them to the fall semester. In China, similarly, a spring college entrance examination was held for the first time in January 2000, marking a sea change in the history of that country's entrance examination system. Students who fail the traditional July examination no longer have to wait a full year to get a second chance.

### **New Challenges for the Donor Community**

The various trends mentioned above have led several donors to revise their priorities when considering financial and technical support for developing and transition countries. First of all, there is a need to embrace a holistic approach of the education system and to move away from an exclusive focus on basic education. While the foundations in terms of basic skills, values and attitudes are imparted during the first years of formal schooling, young people also need the higher order competencies imparted at the secondary and tertiary education levels. During fiscal year 2005, for example, 65 percent of education credits granted by the International Development Agency, the World Bank's window for low income countries, went to basic education; 18 percent supported secondary education operations; and 15 percent were allocated to tertiary education development.

Second, it is increasingly important to design inclusive strategies that offer education opportunities to all groups in society, especially the traditionally excluded such as children from ethnic minorities, girls, and illiterate adults. For instance, the World Bank approved its first lifelong learning loan just a few years ago in Chile, followed two years later by similar operations in Mexico and in Romania.

A third shift consists in putting more emphasis on strengthening basic research to allow developing countries, even low income countries, to build up the necessary scientific and technical capacity to apply knowledge to the resolution of economic and social problems and the achievement of the Millennium Development Goals. Within the framework of the Millennium Science Initiative, the World Bank has recently supported or is currently supporting the development of Centers of Excellence in Chile, Brazil, Venezuela, Kazakhstan and Uganda.

Lastly, donor agencies can play a catalytic role in helping developing countries make appropriate choices in the use of new pedagogical resources that can enhance the effectiveness of teaching and

learning processes. For example, distance education and asynchronous learning can provide increased access to learning opportunities. Digital textbooks can be continuously updated and offer up to date content. Developing countries can also tap the rapidly growing open education resources that are available free of charge, such as virtual lab software, courseware, cognitive tutors, digital libraries, etc.

### **Conclusion**

Two hundred years ago, in a small school in Boston, Massachusetts, a professor of mathematics saw something that he had never seen before in his life: a blackboard, some chalk and a piece of cloth. He wondered what it was meant for. Now we all know that for the past two hundred years the blackboard has been the main pedagogical support in the classroom. The question we should ask ourselves today is how the Internet and related digital resources are likely to revolutionize education in the same way as the blackboard did. In this context, it is worth mentioning Arthur Levine, the president of Teacher's College at Columbia University in New York City, who predicted the death of traditional universities characterized as the "brick universities," to be replaced by "click universities."

While it is not entirely sure that we will witness the demise of the traditional pedagogical model, what is certain is that schools and universities are called upon to change drastically under the pressure of increased competition and growing demands for accountability. But the successful integration of technology into the learning process will require a cautious approach. Notwithstanding the many advantages that modern technologies can offer, their effectiveness depends on a clear strategic vision of their role in support of a new pedagogical project. It is important to define first the new pedagogical approach that a school or a university wants to implement and then to look for the most appropriate technology to prop up that pedagogy. As the Roman philosopher Seneca wrote two thousands years ago, "there is no favorable wind for those who do not know where they are going."

## **KEYNOTE ADDRESS**

### **EDUCATION AND EMERGENCIES**

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#### **Abstract**

This keynote address examines the global situation and the prospects for education in emergencies, including natural disasters and armed conflicts. It reviews the roles of different actors in emergencies and their coordination and cooperation. The author describes the efforts of the Norwegian Refugee Council in planning and providing relevant, quality education support to individuals and communities affected by emergencies.

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The title of this workshop, “Moving from Access to Relevance: Improving the Quality of Education,” can be understood to mean that there is agreement on access, that the right to education is or should be a given, and that relevant education would help improve the quality of education programs. Education in Emergencies can be included under this title. While access to education is by no means secured in crisis situations, education programs in emergency phases are, in some cases, well ahead of the ordinary school systems in non-emergency situations in comparable countries with respect to relevance and, perhaps, also to quality. This discussion does not address education in emergencies, which is, however, possible, viable and urgent.

#### **Emergencies and Education**

The US Fragile States Strategy uses a slightly different terminology than the one I use here. I will briefly refer to the following understanding that has been broadly if not formally adopted within the Inter-Agency Network for Education in Emergencies.

Emergencies include the acute, the chronically unstable as well as the return and early rehabilitation phases. Education is seen in a broad context and can relate to the normal school system as well as to temporary and short-term interventions of formal or non-formal character. An important element is responding to the needs of the affected groups and their surrounding communities, by providing messages of immediate importance and topics of special relevance in the actual situation and for the future. Emergencies refer to natural disasters and armed conflicts. This paper emphasizes the latter.

#### **Poverty and Conflict – Failed States and Unstable Governments**

A newly published list of 60 so-called Failed States makes it clear that if we believe that education is important for a state to develop in a positive manner, our support to this sector is more urgent than ever. It is in the interest of all countries that we apply lessons learned thus far and make joint efforts in planning for the future. A map of poverty and conflict, even one that is a few years old, shows the enormous challenges ahead given that some two billion people live in weak states. Most of the poor countries are on the list of the failed states, and more are projected to join them.

We know that conflict breeds poverty and poverty breeds conflict. We also know that half of the countries embarking on the road to peace fall back into conflict within five years.

1. If we do not offer substantial education support to “the red” countries, we will never reach the millennium development goals of education for all.
2. Statistics show an improvement of only some 20 million enrolments over the five past years. The global community promised education for all by the year 2000, again for 2015. We are once more well behind in meeting the target: Promised funding has not come through.

How do we explain that so many highly educated donors, governments, and institutions with the power, funds, influence, choices and planning capacity, fail repeatedly to keep promises given the numbers of uneducated people who want to learn and who could help their own states from failing?

### **The Fate and Survival of Young People**

Education does not guarantee a peaceful, just world. However, the uneducated may revolt, as happened in Sierra Leone; the Sierra Leone Minister of Education said at the World Education Forum in Dakar in 2000, “We have miserably failed our youth. They are uneducated, unemployed and unemployable.”

We can imagine the desperate, hopeless situation of children, youth and adults in an emergency situation as drowning with no lifeboat. Their fate and perhaps their loyalty may be decided by which boat comes first to “rescue” them – the armed group, criminals, an extremist group, prostitution – or the school. If no school boat comes or does not have room for all the school-age youth and children, chances are that others will provide the only, often destructive and forced alternative.

There is no doubt that many regimes, civil, religious or military, do not truly care about their people, do not give priority to their health, education and wellbeing and appear to prefer that the better part of their populations be uneducated.

However, it is important and timely that we, the educated and wealthy of the so-called north and west, be willing to reflect on issues relating to our roles.

- Re-examine our part in denying education to people in countries of poverty, disaster and conflict by not fulfilling our promises.
- Consider, if and when we do give support, how we are perceived, how we are working with the recipients so that they will not resent us later on.
- Realize that the culture, money, knowledge, and power that we hold may be perceived as crushing to someone even while they are receiving needed support.

While so many people lack and want education, it is painful to acknowledge that more than one dictator was educated at a missionary school, and that many terrorists, criminals, drug pushers and other negative elements are often highly educated. It is therefore clear that education is only part of the picture, along with subject matter, the learning environment, state and community influence and ideology. No doubt the roles of national and international actors in emergencies also have considerable influence.

### **Roles and Coordination**

The UN, governments, humanitarian organizations, peacekeepers and military forces play different roles in conflict situations. There should be a clear understanding of the mandate and responsibility of each and, if possible, of local perceptions of each group. This does not preclude

coordination, which can give support and help prevent misunderstandings leading to dangerous and difficult situations.

At the session on building bridges between USAID and the Defence Department, I learned more about the thinking and rationale for a closer contact. There are dilemmas and exceptions even when close cooperation is not routine, such as when a military escort is needed to secure food transports or when we allow an armed policeman into our humanitarian vehicle when going over the Khyber Pass into Afghanistan to ensure our safety.

One type of contact is familiar to us in Norway. For several years, there have been exercises or role-plays involving military units and humanitarian organizations. The humanitarians play the roles of UN agencies and governments of countries at war and of their own governments. The purpose of the exercise is for all involved to learn more about the mandates, roles and functions of the various actors in conflict and emergency situations. We are also aware that the UN is developing a concept on how to coordinate better the relationship between military and humanitarian actors.

Many humanitarian organizations and most UN agencies avoid being associated with military forces in countries of conflict, fearing that their impartiality will be compromised, and that target groups may be confused. Whatever the plans or perspectives, a thorough and open discussion is essential in order to avoid misunderstanding and misperceptions. Coordination mechanisms and how well they work in emergencies vary from one situation to another. Whether the government or a *de facto* authority takes charge, or whether a UN agency has a sector mandate for education, all actors have a responsibility for contributing to the best possible coordination and use of the present expertise and abilities.

The coordination and overlapping between emergency and development actors should be pursued more fervently than is the case today, namely to ensure a sustainable continuation of education efforts that demand support over a longer period. Some humanitarian actors see themselves solidarity organisations and side with one party in a conflict. But most are aiming to be impartial. This means that there should be more of an effort to reach across to the different factions or groupings when security allows. Our experience from among other places, Angola, Sierra Leone and the Caucasus, is that the education sector may be a good door-opener for such cross “border” initiatives. Summing up coordination comments, humanitarian and development actors with different mandates should more often coordinate efforts better with authorities and among themselves to ensure that rapid interventions are meaningful and have a long-term perspective. In education this may be especially important, as support to the education sector normally must be given well beyond the post emergency phase.

### **The Norwegian Refugee Council Model – One Example for Responding to Education Needs in Emergencies**

In general NRC activities run through three pillars: Twenty Country Programmes; Emergency Standby Rosters of some 500 people who have been recruited, trained and are ready to be called for and deployed by UN agencies anywhere in the world on short notice; and Advocacy on behalf of our target groups – refugees, internally displaced and returnees.

Education is one of four core activities: *i*) the soft components of teacher training, methodology and materials; *ii*) construction and rehabilitation of houses and schools which is placed with the Shelter activity; *iii*) distribution of food and non-food items, and *iv*) information and legal assistance. Camp Management is being tested as a probable additional sector. In the mid-nineties, when we made public our goal of providing education on short notice, we realised that we had to prepare ourselves since education cannot be taken off the shelf as easily as the Red

Cross can open hospitals and provide medicines. We needed to establish a framework and define a number of principles:

- Working Principles, Effective Processes and Programme Development skills.
- Human, Material and Financial Resources. The human resources, i.e. the educators, were included in the standby roster from 1994 on and have been instrumental in rapid response for NRC as well as for UN agencies. When material resources are not found in the country, they can be adapted from generic sources or from similar programmes. This kind of sharing is increasing. For example, with INEE and its members to speed up the response. The Norwegian government is the main source of our financial resources.
- Cooperation with Education Authorities is seen as instrumental, as are coordination with other actors and capacity and competence building for staff and partners. These elements also make up part of the exit strategy.
- Reminders that education provides protection, responds to needs and ensures rights.

### ***Key Target Groups***

Teachers make up the single most important element in education programmes, and considerable effort goes into training and following up to ensure the best possible quality in the given circumstances. Teams of local trainers carry out this work which is occasionally supplemented with additional training or support from international technical experts.

For an organization with short- to medium-term planning horizons like NRC, priorities must be given to manageable projects within the mandate. Children and youth who have lost out on education because of the war deserve a second chance. Ten to thirteen year-olds are offered a 6-12 month catch-up programme to enable them to enter or re-enter formal school, which, we hope exists. Uneducated 14-18 year-olds and older people are in great need of meaningful basic knowledge, life skills and skills training. They are also greatly needed by their war-torn communities for constructive rebuilding and reintegration.

Normally people affected by natural disasters are not within the NRC remit, but with offices in Sri Lanka and Indonesia, we will provide support to communities affected by the tsunami for one year.

### ***Relevance and Quality***

Relevance and quality can be defined in many ways. Relevant education would probably include meaningful knowledge and skills that cater for survival, livelihood, self-reliance and influence in the actual situation and environment. The definition of what is relevant will change when people move from home to exile, from camp to settlement or from an acute phase to the transition to development. Programs must be flexible while also catering for the future with a core of formal and general subject matter.

Quality education in emergencies is more difficult to define than under normal circumstances. Relatively low standards of some elements may be acceptable and still safeguard education quality under certain conditions. A good teacher in a plastic school can provide relevant quality education. Elements of a definition of quality include the following.

- The acquisition of knowledge and skills seen as useful in and by the community.
- Learning takes place in a conducive atmosphere, with a teacher and methods that inspire attendance and completion.
- Viable national and international institutions recognize the education and make it possible for the pupil to move to the next level of academic or vocational education or training.

### ***Emergencies and Opportunities***

Relevance plays an important part in NRC-supported programs. From our experience, donors, UN agencies and humanitarian organizations in cooperation with education authorities in several countries and situations have contributed to making education programs more relevant for teachers and students in their particular situation and phase of conflict or post-conflict.

Unwanted as they are, emergency situations often create opportunities for change and for new subject matter that may not be there in peaceful societies. They make the needs for additional knowledge and awareness more obvious because the school system is weaker, but the situations may make education authorities more aware and more open to changes. Good education programs help protect learners mentally, psychologically and physically. They also help save and develop the intellectual potential for acquiring knowledge and skills. In addition to new subjects, learner-centred pedagogy, training and follow-up of trainers and teachers give children and teachers both immediate relief and longer-term benefits.

There is a constant effort to connect preaching to practice, by, for instance, introducing democracy in the classroom, cleaning the classroom environment and convincing the teachers that putting the stick away makes a contribution to changing the culture of violence.

NRC and many other education actors have included the obviously relevant need for functional literacy along with other new subject matters including peace building and conflict resolution, civic and human rights, environmental concerns and health, with a strong focus on HIV/AIDS, in addition to skills training.

### ***The HIV/AIDS Pandemic***

There is little disagreement on the relevance and necessity of a strong focus on HIV/AIDS awareness. In addition to the personal tragedies that it is creating, the pandemic is affecting education planning in many highly affected countries. Conflicts and poverty make the situation worse as communities break down, and violence and deliberate violations increase the spread of the virus. Studies carried out by the African Development Bank and others have shown how AIDS and related illnesses affect teachers and children, and in particular, girls.

The need to provide correct and relevant knowledge is more urgent than in any other situation and a change of behaviour is vital. The target groups cannot be limited to school children and youth. Community leaders, peacekeepers, religious leaders, humanitarian personnel, males and females must also be informed. Trainers and teachers are instrumental in delivering the messages, notably after having received training themselves, including a strong focus on ethics and codes of conduct vis a vis the children and adolescents. Being aware of the current US policy on HIV/AIDS information, one can appreciate and support the strong call for abstinence but still fail to understand the ban on the use of condoms. In reality abstinence is not an option for a vast number of girls and women – as long as men do not understand the danger and leaders do not take responsibility for contributing to the change of behaviour and customs.

### ***Special Attention: Non-formal Youth Education***

I would like to mention The Youth Education Pack, a pilot project for young people between 14 and 22, half boys and half girls, carried out in Sierra Leone over the past two years. The objective was to provide a compressed year of education and learning with three components including functional literacy, life skills and skills training for this target group comprising primarily returning Internally Displaced Persons and refugees but also locally affected and some demobilized youth soldiers. All had missed out on all or most of their education.

An evaluation done after the two years illustrated that the skills training element was the most important to the young people and that they in fact were able to get jobs. The literacy part was too

academic and therefore seemingly less relevant. The program did a lot for the young people's self-esteem and their standing in the community while also contributing to the re-integration of child soldiers. The main dilemma is that unless this type of intensive quality programme is supported by an international actor in the early post conflict phases, a local NGO cannot continue it and will not be given priority by the authorities who are struggling to get the formal system in place.

### ***Catching Up: A Rapid Response with a Long-term Perspective***

Depending on the mandates of education or humanitarian actors, priorities and methods of response will vary. At the same time as attention is being given to the formal system, sufficient attention should be given to the backlog of over-aged out-of school children and youth. Mechanisms need to be created for them to catch up and look towards a productive future. A list of priority actions could look like this, notably all in consultation with the given education authorities.

- Programs for teacher training and for qualification of the untrained teachers.
- Catch-up and Accelerated Learning Programs for the backlog of those who missed out
- Generic learning materials for adaptation and local development.
- Community involvement and partnership with development organizations for ownership and sustainability.
- Emergency Funds for rapid response, including funds to secure multi-year programmes that enable more children and youth to complete their basic and continued education.

### ***Expectations for the Millennium Development Goals***

The Norwegian government has issued its strategy of support to the education sector, calling it *Education – Job Number 1!* We take this as a serious commitment to making material contributions to the global effort. We are rapidly approaching the release of the MDG Working Group Report for 2005 and the Summit meeting in September. Preliminary comments have stated that the report “will show how the Goals can be met through a coordinated effort of investments in health and education in poor countries.” We would like to believe that promises made in the year 2000 will be honoured.

## FOSTERING EDUCATION FOR FEMALE, OUT-OF-SCHOOL YOUTH IN AFGHANISTAN<sup>1</sup>

**Jo Ann Intili, Ph.D. and Ed Kissam, Ph.D.,  
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Eileen St. George, Ph.D., Creative Associates**

### **Citation**

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### **Abstract**

In 2003, in response to the lack of educational opportunities in Afghanistan for the general population and especially for females, the United States Agency for International Development funded the Afghanistan Primary Education Program (APEP). APEP offers emergency access to accelerated elementary education for out-of-school youth between ten and eighteen years of age, focusing on females. Between 2003 and 2005, APEP supported Accelerated Learning (AL) programs for 170,000 over-age youth in more than 3,000 villages in Afghanistan. This paper describes the program strategies and the significant results achieved for female youth.

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### **The Context**

In 2003, in response to the lack of educational opportunities for the general population and for females in particular, and to an educational structure in disarray after twenty years of war and turmoil in Afghanistan, the United States Agency for International Development (USAID) funded the Afghanistan Primary Education Program (APEP), a consortium of Afghan non-governmental organizations (NGOs) and international partners.<sup>2</sup> APEP offers emergency access to an accelerated elementary education program to out-of-school youth 10-18 years old with few or no educational opportunities, focusing on female out-of-school-youth.

APEP operates an AL component<sup>3</sup> in 17 of the 34 Afghan provinces so that over-aged students can quickly catch-up with their schooled peers and hope to enter the formal school system. Other APEP components focus on textbook production, radio-based teacher training, and capacity-building support to the Ministries of Education. The AL component is implemented through five Afghan NGOs, a British organization supporting children in crisis which is responsible for teacher training and an American monitoring and evaluation (M/E) firm.<sup>4</sup>

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<sup>1</sup> This paper is based on the work of the USAID Afghan Primary Education Program.

<sup>2</sup> Creative Associates International, Inc. (Creative), leads the consortium of four international organizations, Aguirre International, Division of JBS (AI), Children in Crisis (CIC), Media Support Solution (MSS) and American Manufacturers Export Group (AMEG), and 5 local Afghan organizations, Afghanistan Development Association (ADA), Afghan Women's Education Center (AWEC), Coordination of Humanitarian Assistance (CHA), Coordination of Afghan Relief (CoAR), and Development and Humanitarian Services for Afghanistan (DHSA).

<sup>3</sup> For a review of different approaches to Accelerated Learning, and its meaning for Afghanistan, please see Intili J. and E. Kissam (2004a).

<sup>4</sup> The international organizations are Creative Associates International, Inc (Creative), Aguirre International, Division of JBS (AI), Children in Crisis (CIC), and the local implementers of AL are Afghanistan Development

The APEP AL project outcomes show that gender inequities such as inequitable access to services and service quality can be overcome although the results are not the sole achievement. They are, however, an indicator of what can be achieved by paying particular attention to developing community support for educational programs and teacher training so that the benefits of participation in education for individual students, their families, and the community become clear.

### **Monitoring and Evaluation Data**

This paper is based on findings from monitoring data solicited on community mobilization, classroom practice, and teacher demographic characteristics, and evaluation findings from a longitudinal study for Grades 1 and 2 of APEP's AL Program. The M/E team comprises provincial monitors supported by the implementing partners, researchers hired directly by the APEP M/E unit, and a team of seven staff and two consultants who organize, verify, analyze and report the data. Several methods are used. First, self-reporting, supported by site visits, related to community mobilization strategies and experiences, teacher demographics, training experiences, and a description of classroom outcomes collected at the completion of each grade level. Second, a longitudinal study of student outcomes and experiences in the program of a random sample of 560 students (seven students/class, eight classes/province) in ten of the 17 provinces (ALLS) collected at the end of each grade level. Third, a community case study including two AL sites in each of two provinces to focus on teachers' experiences, collected during period one month in each community.<sup>5</sup> Findings from M/E activities are provided in an integrated report for each grade level and shared with APEP partners and management at the end of each term.

### **Education in Afghanistan as of January 2005**

According to the Ministry of Education (MOE), enrollment in the formal school system was approximately 4.5 to 5 million students in 2005, an increase of 50% from 3.1 million students in 2003. These numbers are good news; they demonstrate impressive progress. But a more cautionary view may be appropriate, considering what defines being in school. "School" often includes only two to three hours of study per day in overcrowded classrooms, where an average of 60 people occupy benches or maybe desks. Impressive as they are, these numbers do not begin to satisfy the appetites of the scores of children, youth and young adults who have no educational opportunities. A significant portion of the "older" illiterate students are seriously interested in becoming literate notwithstanding the significant barriers they face. The challenges of providing access to over-age education were the basis for USAID's APEP program.

The educational needs of illiterate youth are great in Afghanistan, but difficult to estimate because available data does not include the ages of enrolled students. UNESCO's Education for All Country Report (2000) estimates a maximum 20% literacy rate for adolescents and young adults between the ages of 15-24. This age cohort includes approximately 5.1 million young people, but only 240,000 are actually in school.<sup>6</sup> That leaves approximately 3.8 million adolescents and young adults in need

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(CHA), Coordination of Afghan Relief (CoAR), and Development and Humanitarian Services for Afghanistan (DHSA).

<sup>5</sup> For an in-depth description of the strategy for monitoring and evaluation, contact [jintili@aiweb.com](mailto:jintili@aiweb.com). The monitoring and evaluation instruments are too voluminous to be included with this paper. However, a description of the monitoring and evaluation strategy and protocols is available upon request.

<sup>6</sup> School-age population estimated at 4.5 million is based on demographic data from the United States Census Bureau International Database (2003). The baseline 2000 data for cohorts age 5-9, 10-14, and 15-19 years are adjusted by an estimated growth rate of 3.5% per year. Actual numbers of school-age children may differ from this estimate. The lower bound for growth rate is 2.4% (natural increase) but repatriation of refugees adds to this figure, so the higher estimate appears to be justified.

of educational opportunities to be able to continue through secondary school or vocational training. Similarly, UNICEF World Food Program [WFP] data analyses of Mobile Information & Communications Systems [MICS, 2005] show that more than half of the youth and young adults in every province is significantly compromised in functional literacy; the average literacy rate is lower than 30%. The issue of education and literacy has profound implications for the stability of Afghan society and for the country's future economic viability.

The Afghan education curriculum and the teacher trainers' work experiences show that, as students move from Grades 3 through 6, they learn to use their cognitive abilities to reason and parse meaning from statements, to organize their thoughts, to communicate effectively, and to better understand the implications of the acquired knowledge, not only for themselves but also for their communities. Learning these rudimentary skills, in turn, stimulates the students' yearning to learn more. Table 1,<sup>7</sup> summarizes the main skills taught in the elementary education curriculum:

**Table 1 : Educational Attainment, Selected Elementary Grades, Afghan Formal Curriculum**

Academic Attainment	Associated Strengths and Limitations:
<b>END OF GRADE 3</b>	
<ul style="list-style-type: none"> <li>▪ Math: Basic addition, subtraction, division and multiplication; beginning fractions; and measurement properties.</li> <li>▪ Language - Reading: Recognize basic words, antonyms, synonyms; read simple sentences; grammar and comprehension.</li> <li>▪ Language - Writing: Construct simple sentences and three-sentence paragraphs; two-paragraph poems; and instructions.</li> <li>▪ Life Skills: Health, safety and study skills (basic drug education, study skills, land-mine education).</li> </ul>	<p>Basic calculations - concrete operational thinking. Without basic achievement, students will not effectively extrapolate the learned skills to the outside world. Example, the issue of global-spatial relationships exists when applying numbers to real world situations, requiring control of language, and the ability to comprehend a world beyond the neighborhood.</p>
<b>END OF GRADE 4</b>	
<ul style="list-style-type: none"> <li>▪ Math, Science: five-digit numbers, place values, fractions, decimals, introduction to geometry; basic introduction to the solar system and, human and plant biology.</li> <li>▪ Reading, Writing, 2<sup>nd</sup> Language: Read and understand simple sentences, recognize new words from context, write a well-ordered grammatical sentence.</li> <li>▪ History, Geography: Different regional and country contributions to Afghanistan and its governance.</li> <li>▪ Health, Life Skills, Arts, Sports: Basic hygiene and disease prevention; peace and diversity education; arts related to the real world, such as drawing, calligraphy, music; basic Afghan sports and culture.</li> </ul>	<p>Continue mastering basic reading, writing, math, introductory science and history. Moves from concrete operational thinking toward more abstract logical thinking.</p> <p>Little ability to test inference and assumptions, to discuss how skills apply to the real world; scant science and social studies knowledge with no ability to communicate in the second national language; only limited vocabulary in both the first and second languages.</p>

<sup>7</sup> The authors compiled this table with the advice of the staff of Children in Crisis (CIC). CIC is the APEP partner responsible for designing and implementing teacher training in the Accelerated Learning (AL) project.

END OF GRADES 5 AND 6	
<ul style="list-style-type: none"> <li>▪ Math, Science: Ratio, proportion, percentage; basic geometry; basic human biology and earth science.</li> <li>▪ Reading, Writing, 2<sup>nd</sup> Language: Reading for meaning; writing accurate directions and accurately communicating an idea.</li> <li>▪ History, Geography: Continents of the world and provinces of Afghanistan; relation of different peoples to each other.</li> <li>▪ Health, Life Skills, Arts, Sustained focus on themes related to personal and family management, community relations, and some focus on career development.</li> </ul>	<p>In grade 5 and 6, they begin to test knowledge in real world; to use systems and logic; and to understand the relationship between theoretical and practical logic. Limited use of critical thinking.</p> <p>Without min. grade 6 achievement, students will have inadequate skills for strategic thinking, and instead remain immature with child-like beliefs and understandings. Rather than think critically, they are more likely to accept authoritative directives; rather than systematically assess arguments for logical explanations, they are more likely to accept incomplete statements and disorganized presentations.</p>

Significant challenges exist for realizing the educational goals of maximizing enrollment; minimizing attrition and grade repetition, and ensuring gender equity and access throughout the country. An effective national campaign is needed to persuade the community leaders, parents and participants that their investment of time in education will translate into concrete benefits soon after enrollment and that expand directly with sustained and consistent education participation. Between 2002-2005, progress was dramatic in providing educational opportunities, but far more capacity-building is needed to compensate for the extensive destruction during the many years of war and to accommodate some 716,000 first-grade entrants each year.<sup>8</sup>

### **Females in Afghan Education**

Throughout Afghanistan's history, females' access to education has been severely limited. The December 1979 Russian invasion put an end to much of the educational progress in the early 1970s, disrupting the management and provision of education nationwide. The Taliban government, 1994-2001, repressed women even more severely and female education left the national agenda. Since 2002 education has risen to the top of the nation's priority list, and total student enrollment has more than tripled (Appendix 1).

As a baseline for this discussion, we use the Gender Parity Index (2000). It reports that in 2000, females constituted only approximately 10% of the primary-school student population. MoE statistics indicate that more than 1.3 million girls enrolled in 2003, and that MoE was planning to double that enrollment in 2003-2004, hoping to ensure retention for the full, 12-year curriculum. MoE statistics indicate that the female-enrollment rate supports progress toward Afghanistan's goals. Table 2 gives the female-to-male ratio for student enrollment at three levels of schooling as of 2003.

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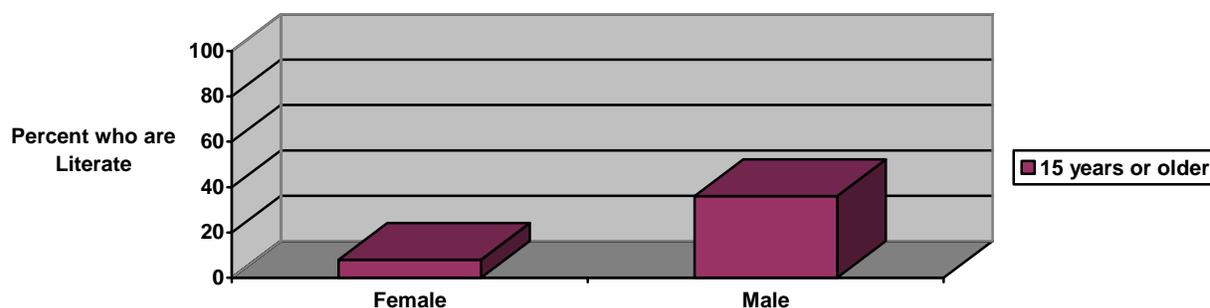
<sup>8</sup> Estimates based on Afghanistan's Ministry of Education (2003) regional student enrollment data for Eastern, Northern, Central, Western, and Southern regions.

**Table 2: MOE % Female Enrollment in Formal Schools by Region<sup>9</sup>**

Region	% of Enrollees in Primary School (grades 1-6) who are Female	% of Enrollees in Middle School (grades 7-9) who are Female	% of Enrollees in High School (grades 11-12) who are Female
Northern	59	39	46
Central	41	12	8
Eastern	49	8	4
Western	53	33	42
Southern	12	6	7
<b>Nationwide</b>	<b>44</b>	<b>23</b>	<b>25</b>

Table 2 shows that female participation rates in middle school for Northern and Western region schools are lower than for high school. This probably reflects resources available past elementary school for girls and, at the high school level, both male and female retention in areas where attitudes about female education are more positive. However, most remarkable in Table 2 is the great regional disparity: The Southern region has extremely low enrollment at all education levels; the Central and Eastern regions decline to comparably poor female enrollment at middle and upper levels. The 2005 WFP UNICEF National Rural Vulnerability Assessment [NRVA] indicates that, as of 2004, the literacy rate for Afghan women was less than one-third of that for men of similar age.<sup>10</sup> Table 3 provides an analysis from the Afghan Education Management unit (UNICEF WFP MICS, 2005), demonstrating the same gender-based inequity.

Table 3. Literacy Rate by Gender and Age Category



If Afghan women are to have equitable access to technical, professional, and managerial positions in the workplace, the gender-equity reforms already in progress in primary education need to be encouraged for middle- and upper-school age females. Progress is being made. The APEP project was designed to target this over-age population, with its special requirement that 56% of the enrolled population be female. Other programs that provide educational opportunities for illiterate and under-

<sup>9</sup> Based on Ministry of Education enrollment data by province, 2003; rounded to nearest percent.

<sup>10</sup> Obtaining an accurate total enrollment count, and the percent increase in those numbers, is hampered by the lack of a population census in the country. MoE figures for school enrollment and estimates of population size within a province may not be consistent. For example, as of 2003, there seemed to be 110% of the population enrolled in Kunduz. This circumstance led to the realization that percent changes in the enrollment count has to be analyzed by province, and should factor in what the likely "eligible" population for the province is. Further, the population in any province is not necessarily stable because of the constant influx of returning refugees. This, too, complicates calculation of the denominator, when figuring the percent of female enrollment or the ratio of female to male enrollment in an area.

educated youth may serve as many as 150,000 more students, some proportion of which will be female. However, even if we assume that twice that number in the under-educated population has access to some educational services, the system stills fails to serve 90% of the some 3.8 million youth who need education.

### **Accelerated Learning (AL) in USAID's APEP Project**

APEP initiated its AL program with only two implementing partners in three provinces.<sup>11</sup> But within months months, APEP expanded the program to 14 additional provinces, by recruiting additional partners, and increased the service population in the original 3 provinces. By March of 2004, APEP was able to foster the education of 170,000 students in more than 3000 villages throughout 17 provinces. Table 4 describes the APEP approach to fostering education.

**Table 4<sup>12</sup>: 5 Stages in APEP AL Strategy Development for Fostering Education for Female Students**

<b>Initial Planning with NGOs</b>	Understand goals and objectives. Develop locally focused curriculum.; Develop teacher-training strategies. Work with the MoE to obtain a memo of understanding. Develop M/E system.
<b>Community Mobilization Teams Identify Communities with Need and Internal Support</b>	Identify level of available support. Work with community councils, or <i>Shura</i> , <sup>13</sup> to understand the AL program opportunity. Identify class location. Recruit students and teachers. Reinforce the educational process.
<b>Trainer and Village Teacher Trainings</b>	Implement cascade training model by preparing trainers to train teachers and teachers to teach students in Grade 1. Develop materials for teachers to teach. Translate and deliver teaching guides and needed teaching supplies. Implement master trainer trainings in the capital. Implement provincial trainer and teacher trainings in the provinces.
<b>Initiate AL Component in the Provinces</b>	Inaugurate instruction in each selected district. Manage, monitor and collect instruction data. Support instruction with on-going coaching and periodic trainings to enable teachers to work in successive grade levels. Assist <i>Shuras</i> in supporting the education process; Institute a continuous troubleshooting and solving problem schedule.
<b>Expansion to 14 additional provinces</b>	Recruit new NGO partners. Replicate other stages scaled to meet new expanded requirements.

Different geographical regions were selected for the AL program, as much as security concerns would permit. Some of the most educationally deprived, low-literacy and low-resource provinces were included with others with greater access to educational opportunity. Table 5 summarizes the literacy rates for provinces with AL Centers and shows the female enrollment rates in the APEP AL program and the formal government schools. In all but one province (Balkh), APEP's program has significantly more women enrolled than the formal schools. Balkh may be an exception or it may be that the data for MoE schools are from the more urban areas, whereas AL classes are in rural areas.

<sup>11</sup> ADA in Baghlan and Nangarhar Province, and CHA in Faryab Province.

<sup>12</sup> Data from APEP internal documentation of program start-up.

<sup>13</sup> Shuras: village councils, mostly male dominated, which focus on local educational issues.

**Table 5: Summary of Literacy and Enrollment Rates for Provinces in APEP's AL Program**

Province	% Illiterate*	% Females Enrolled in Formal School	Total Enrolled in APEP's AL Classes**	% Female in APEP's AL Classes**
Baghlan	74	44	10004	60
Balkh: Urban-Rural	71-78	42	9825	31
Dai Kundi /Uruzgan	79	17	10,000	61
Farah	76	21	9900	49
Faryab	85	35	9977	57
Ghazni	73	26	9805	70
Kandahar	72	16	9995	76
Kabul: Urban-Rural	36-74	46	10139	31
Kapisa	64	42	9888	74
Khost	78	Not available	9994	49
Kunduz: Urban-Rural	52-84	34	10027	63
Laghman	67	50	9384	75
Logar	63	28	10688	60
Nangarhar: Urban-Rural	59-61	41	10688	47
Paktiya	78	16	9967	49
Parwan	69	38	9948	65
Sari Pul	81	24	9765	45
*Based on MICS data, 2003-4 ; Note in some cases Urban-rural differences may be high.				
**Based on APEP's Monitoring Form 1 Data from 2nd grade				

Villages selected for AL Centers are required to demonstrate their willingness to foster an AL program including females, and to provide other educational support for the program. Selected villages had the following pre-requisites:

- Provide appropriate class location.
- Support participation by both girls and boys in the eligible age range.
- Support the use of the APEP-MOE curriculum.
- Provide class security.
- Select a mentor or village teacher, whom the project would train.
- Encourage attendance and completion of learning tasks.

Once a village is selected, APEP, through the implementing Afghan partners, pays the teachers' salaries, provides some of the educational supplies (such as paper, notebooks, exam books, writing materials, blackboard paint, etc.), and undertakes teacher training, training management, and other support of the teaching process.

#### **APEP Target Goals, Outputs, and Numbers**

The APEP AL program uses straightforward benchmarks for performance. Table 6 presents program indicators, benchmarks, and achievements based on continuous APEP monitoring reports from more than 6,800 classes throughout the 17 provinces.

**Table 6: Expectations and Achievements**

Expected as of 1 July 2005	Achieved as of 1 July 2005
<ul style="list-style-type: none"> <li>▪ 170,000 students</li> <li>▪ 56% female enrollment</li> <li>▪ 475,000 Grade Years Completed: <ul style="list-style-type: none"> <li>▫ 15,000 completed 4 years</li> <li>▫ 105,000 completed 3 years</li> <li>▫ 50,000 completed 2 years</li> </ul> </li> <li>▪ 266,000 Grade Years for Women</li> </ul>	<ul style="list-style-type: none"> <li>▪ 169,757 students</li> <li>▪ 56% female enrollment</li> <li>▪ 474,880 Grade years completed <ul style="list-style-type: none"> <li>▫ 15,000 completed 4 years</li> <li>▫ 105,604 completed 3 years</li> <li>▫ 49,272 completed 2 years</li> </ul> </li> <li>▪ 272,546 Grade Years for Women</li> </ul>

The female participation rate for the first few months of the project was approximately 36%, comparable to the female participation rate in the formal school system (see Table 5). Within six months, however, participation rose to 56% and dropped by only 6 to 7 percent as the students progressed through Grade 3. Table 7 describes these achievements in greater detail.

**Table 7: Other APEP Project Outputs as of December 31, 2004 Projected through Project Completion, December 30, 2005**

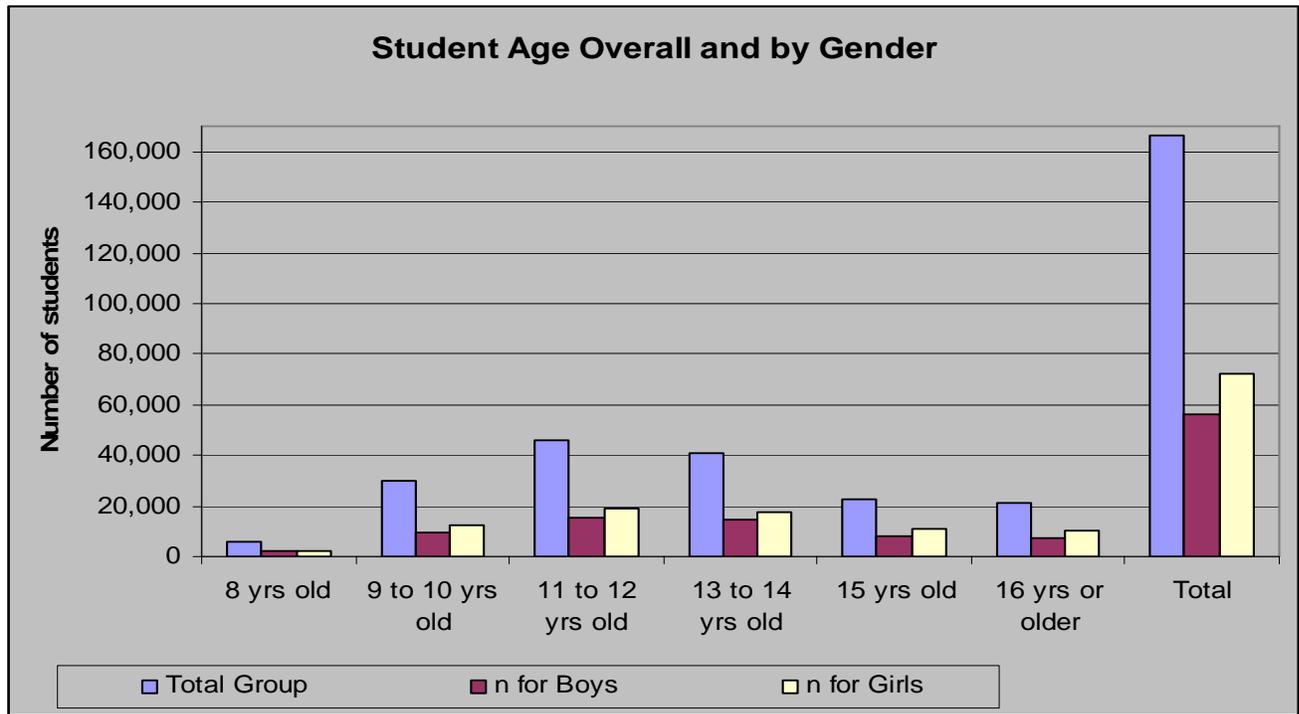
<ul style="list-style-type: none"> <li>▪ Provided educational opportunities to 170,000 students (see Table 6).</li> <li>▪ Established schools in 2,108 villages where there were no schools previously; and, in more than 1400 villages, where there were schools, made education accessible to students who wouldn't be admitted because either they were overage, the school had reached capacity, or the school was not gender-appropriate schools.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Of the 170,000 students, 70,592 girls, and 54,232 boys, ages 8 to 14 years, were enrolled;</li> <li>▪ (By December 30, 2005, 8% will have completed grade 5; 64% will have completed grade 4; and 28% will have completed grade 3.)</li> </ul>
<ul style="list-style-type: none"> <li>▪ Of the 170,000 students, 25,649 girls, and 19,525 boys, ages 15 years and older were enrolled;</li> <li>▪ (By December 30, 2005, 10% will have completed grade 5; 66% will have completed grade 4; and 24% will have completed grade 3.)</li> </ul>
<ul style="list-style-type: none"> <li>▪ A 6% dropout rate, approximately half of dropout rate in the formal school system.</li> </ul>

Were AL to be extended through grade 12, the efficiency of the educational service delivery system would double. However, we project the drop-out rate over 12 years would be 30%.

Table 7 gives tallies for young women and men who must contribute to their families' livelihoods and to their own. The largest portion of the students has no parent(s) with stable employment (25%); large portions of the parents of these students are farmers (23%), skilled laborers or professionals (19%); and merchants or shopkeepers (12%).<sup>14</sup> A small percent of the students are children of the APEP teachers (8%). For all students, an educational program 'opportunity' offers a difficult choice. Each hour of participation reduces the time they spend helping the family with chores or work and lowers the family's ability to stay afloat. Table 8 shows the distribution of students by age and gender. Three-quarters of the students (74%) have siblings living at home; and about one of three students has a sibling in an AL class. Successfully attracting and keeping students, especially female students, requires ongoing attention to the benefits.

<sup>14</sup> APEP M/E data (AL LS, Question D-6 - Note 13% did not answer the question.) For more information on M/E data, please contact [jintili@aiweb.com](mailto:jintili@aiweb.com).

**Table 8: APEP AL Participants by Age and Gender<sup>15</sup>**



**Sustaining Participation and Interest in Learning**

This next section analyzes student recruitment and retention and then discusses how communities related to the program, how participants performed, and what factors seemed to affect participants’ performance, using data drawn from the APEP M/E system.<sup>16</sup> Success in student recruitment and retention seems to be a function of *i*) reminding parents and community councils to review the risks and benefits of participating; *ii*) making classroom work interesting and immediately useful; *iii*) locating schools conveniently; and *iv*) implementing a monitoring, evaluation and supervision process that reinforced attention to student participation and outcomes from the education process.

**The Community in the Decision to Enroll**

Community mobilization is critical for enrollment.<sup>17</sup> APEP’s Afghan partners conducted a strong promotion campaign urging parents to send their children, and especially their daughters, to class notwithstanding the dangers of a country recovering from war<sup>18</sup> and the extreme constraints on

<sup>15</sup> Based on APEP Monitoring Data -Form 7, items 18 and 19, and by gender for those in classes designated either male or female students. Note that as a result of Form 7 item construction for grades 1 and 2, except for single gender classes respondents were not asked student age by gender. Thus this table reports analysis on single gender-classes only - 84% of the classes. For more information on the APEP M+E instrumentation: [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>16</sup> The presented findings are based on continuous monitoring reports from over 6,800 classes in 17 provinces with 170,000 students; evaluation studies in a subset of 80 classes in 10 provinces with 560 students; and 4 case studies in four class sites in two provinces. For more information on the APEP M+E instrumentation, please contact [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>17</sup> Data from APEP Monitoring Form 2, collected by mobilization teams in each community prior to Grade 1. For more information on the APEP M+E instrumentation: [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>18</sup> The Afghan *post*-war violence has negatively impacted the AL project at the village level; however it has not affected enthusiasm for the program. Specifically, a school bombing in Paktia claimed the lives of a teacher and

students' time. The campaign focused on building trust and providing tangible support, such as laying the foundation for ongoing community dialogue and problem-solving. Each partner worked with a community mobilization team, two or three staff identifying communities in need of primary education services for over-age students, and working to mobilize the level of support and commitment to education in each identified community. The Afghan organization partners had worked in community mobilization previously,<sup>19</sup> so each organization had two or three community-mobilization specialists. In two-thirds of the communities, the mobilization team met with three or more stakeholder groups including the village council, village leaders, *mullahs*<sup>20</sup>, and parents. Fewer than 10% of these meetings were in large groups, a third were individual meetings, a fifth were small group meetings, and others were conducted in a combination of formats. Table 9 lists the concerns reported to the Mobilization teams by the various stakeholder groups.

**Table 9<sup>21</sup>: Problems Working with Communities to Establish AL Centers**

Practical Problems Encountered by Mobilization Teams	% Mentioning problem	Numbers of Sites
<b>Gender-Related</b>		
Q6b – Finding female mentors	40%	1,447
Q6a – Discussing propriety of female attendance	20%	722
<b>Program Logistics</b>		
Q6c – Agreeing on the class location	20%	739
Q6e – Scheduling class times	19%	686
<b>Other</b>		
Q6d – Envisioning the formal school system interactions	8%	301
Q6f – Other problems	20%	725

Although female attendance was mentioned as a problem at all AL sites, the problem usually resolved itself during mobilization team discussions with the *Shuras*.<sup>22</sup> Still, in 20% of the sites, fostering female enrollment required significant time and energy to address issues related to the availability of teachers, the location and quality of school sites, class schedules, security, among other issues. The biggest obstacle to fostering female enrollment was a shortage of female teachers. Some partners explored the following strategies to remedy that.

- Sponsoring intensive tutoring for outstanding female students to serve as substitute teachers (which also gave them a foothold in an interesting career);
- Recruiting and shuttling female teachers from nearby villages;
- Coaching *Shuras* to encourage their most qualified women to be trained as teachers;
- Urging *Shuras* to approve male teachers for female classes;

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several students, and, in Kandahar, the deaths of AL program staff coupled with night letter threats led to the cancellation of some other classes. As tragic as these incidents are, remarkably they have not shaken out-of-school youth's strong commitment to education.

<sup>19</sup> Three of the Afghan organizations had worked in Afghanistan during the Taliban period and beyond; and two had worked in refugee communities outside of Afghanistan. Often this work was not in primary education, but mobilization of community support for a program was a key part of each organization's strategy.

<sup>20</sup> Islamic religious leaders.

<sup>20</sup> For more information on the APEP M+E instrumentation, please contact [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>21</sup> For more information on the APEP M/E instrumentation, please contact [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>22</sup> Although *Shura* Councils existed prior to the APEP project, the AL mobilization teams can be credited with prompting the development of many more through their successful efforts to stimulate and fortify the educational market.

- Working with *Shuras* to approve co-educational classes.

Mixed classes are not common in Afghanistan and were initially seen as making female students vulnerable. APEP programs therefore began with only a few mixed gender classes. After the program's first successes in communities in the first three provinces, and with the inclusion of a female-owned and operated partner organization as part of the expansion (AWEC), these classes grew. By the end of the first grade of the expansion group, 16% of the classes were mixed gender; they increased to about 23% by the end of Grade 2.

### ***Differing Attitudes towards Female Education***

Community attitudes towards female education differed greatly among villages even in the same province. For example, in one province, there was only an estimated 20% female participation in one village and 90% participation in another. In some but not all villages, opposition to mixed-gender classes was intense, making the establishment of any female class impossible, even though there was support for initiating an AL class for the boys, even though there had been no opportunity under the Taliban to provide education to girls and women in the village. Objections to female education were (in language close to the way it was expressed in Dari or Pashto).

- Photos might be taken of girls.
- Girls just should not go.
- Males might enter girls' classes.
- Security issues are too much for girls to go.
- Girls must work.
- More focus on Islamic subjects is needed.

Similar community attitudes are seen across provinces. Overall, seven provinces – Uruzgan<sup>23</sup>, Paktya, Kapisa, Farah, Kabul and Balkh – stand out as hostile to co-education. At least three-quarters of the villages raised one or more concerns about female enrollment requiring extensive debate. Conversely, five provinces – Kunduz, Laghman, Parwan, Baghlan, and Logar – could be labeled generally positive towards coeducation, with less than a quarter of the villages voicing concern.

Table 10 presents contrasting regional attitudes and the spectrum of attitudes and responses to female education. Table 10 presents the more negative end, but some villages revealed such a community bias *in favor* of female education that a male Mentor headed the girls' instruction in one community. Another village favorable towards female education even allowed their girls to register for the AL program without an accompanying parent. In another instance, positive support, classmates voluntarily carried their legless girlfriend, injured in the war, just so she could participate in the AL classes.<sup>24</sup>

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<sup>23</sup> The section now created as the independent Dai Kundi province.

<sup>24</sup> This incident was learned during a site visit to Laghman Province, June 2005.

**Table 10: Attitude Differences Concerning Female Enrollment by Province**

Report by Province <sup>25</sup>	# Sites Reporting for the Province	% of AL Sites where Mobilization Teams Reported Concerns about Female Education					
		Female Education in general	Finding female mentors	Class Location	Class Schedule	Formal School System	Other Concern S
Baghlan	400	5	20	9	3	1	2
Balkh	177	36	65	0	45	44	16
Farah	115	30	69	34	32	31	2
Faryab	121	9	26	22	3	7	7
Ghazni	267	21	20	39	2	3	3
Kabul	137	52	69	58	58	7	7
Kapisa	128	33	73	19	46	34	19
Khost	130	31	42	23	30	23	25
Kunduz	280	3	5	4	19	<1	0
Laghman	315	1	6	5	0	0	<1
Logar	286	27	13	20	37	1	5
Nangarhar	401	4	39	8	1	0	62
Paktya	312	71	96	17	5	1	46
Parwan	161	4	10	2	4	3	16
Sari Pul	153	3	57	9	10	22	52
Uruzgan	212	20	100	100	86	16	45

### Factors Affecting Whether Classes Continue

Factors affecting the start-up or continuation of classes in the community and the inclusion of female students in the classes are associated principally with the attitude of the *Shura* and how well the mobilization team has been able to convince them to advocate for the class with potential students.

### Community Role in Supporting Students

When asked, ‘Who in the community provides important support for students?’ approximately 90% of the teachers reported various groups, such as the parents, “all” the villagers, the village elders, educated community members, and members of the *Shura*’s Education Committee; one report mentioned the Governor. The teachers’ responses distinguished between the community’s general “permission” to parents to allow their children to attend school, and their duty to follow up on the reasons for absenteeism. Together these responses suggest active *Shura* involvement in promoting student participation in slightly more than two-thirds (69%) of the classes. Three percent of the teachers reported that *Shura* members offered to volunteer in the AL class if it would be helpful and in 5% of the villages, the *Shuras* demonstrated their support by buying additional classroom supplies. Table 11 summarizes the *Shuras*’ activities supporting the AL program.<sup>26</sup>

<sup>25</sup> Data for this table were not received from Kandahar province due to violence occurring during the M/E period.

<sup>26</sup> For more details on the *Shura*’s role, please see Kissam, E. and J. Intili (2004).

**Table 11: Shura Support to AL Program<sup>27</sup>**

<b>Role of the Shura</b>	<b>% reporting</b>
Provides general, unspecified help or support.	34
Promotes student participation, encouraged attendance and motivated parents to support the students.	26
Guarantees security for the AL classes.	21
Members monitored the AL class.	6
Provided drinking water, a heater, or other class supplies.	4
Failed to offer help.	7

### ***The Parents' Role in Supporting Students***

The parents also play an integral role in the supporting the process. The longitudinal survey of a subset of the AL sites (ALLS)<sup>28</sup> has indicated that parental support during Grade 2 increased in more than two-thirds (70%) of the villages. The most common, almost universal, mode of parental support mentioned is the parents' encouragement to their children about schoolwork and class attendance. For out-of-school youth to attend the classes, parents had to alter their daily routines and give students respites from their family responsibilities. Twenty-two percent (22%) of the AL teachers reported that some parents actually reduced their children's domestic work load to make more time for educational activities. More interesting were the reports that the entire family was increasingly becoming involved in the completion of homework assignments, pointing to the fact that learning is a highly contagious activity. According to the ALLS, Grade 1 reports, 30% of the students claimed they received parental homework assistance, with 24% being helped by the father, and 6% being helped by the mother,<sup>29</sup> and 39% of the students documented that a sibling helped with schoolwork. Those same reports by Grade 2 students showed almost half, 43%, receiving help by some relative, with it being a sibling in only 11% of the cases and some other relative in another 14% of the cases. All in all, more than two-thirds of the students in the ALLS sample got help with their homework from someone at home.

The reports from teachers correlate with the students' own reports about getting help with homework. By the end of Grade 2, 56% of the teachers recorded that parents were helping with homework. The term *parents* often referred to any family member, and *helping* ranged from hands-on assistance to mere encouragement. Seven percent of the teachers also mentioned that family assistance included acquiring classroom supplies. Finally, teachers reported that only 29% of the students received no help from family members.

### ***The Family's Role in Supporting the Female Teachers***

A final dimension of community support to AL teachers is the level of support they, themselves, receive from their families. Four out of five AL teachers (81%) said that their families were more supportive of their work in the AL program during Grade 2 than they had been during Grade 1. One out of five teachers said their family's level of support had not changed between the two years.

<sup>27</sup> These data are a coding of a subset of responses (n= 530), selected randomly, following SPSS-automated procedures, from the APEP monitoring data for item 45 in Form 7. Although all teachers responded to this item, it was deemed to burdensome to code the entire 6800 comments; a subset was selected. Note in the more detailed longitudinal sample data, the proportion of shura support is even higher - 58% of these teachers mention it. For more information on APEP's M+E data, contact [jintili@aiweb.com](mailto:jintili@aiweb.com)

<sup>28</sup> For more information about APEP M+E activities, contact [jintili@aiweb.com](mailto:jintili@aiweb.com).

<sup>29</sup> The interview format allowed multiple answers, so that some students actually may have received help from multiple relatives, such as the father and a sibling.

As with the students, support from families and other community members can determine whether female teachers and mentors continue teaching. Societal pressures can also undermine the AL structure, as where a village leader married the AL teacher mid-way through the class term and would not allow her to return to her post. In this case, the AL mobilization team sprung into action, and, after working through the *Shura* with the family to arrange a solution, the class eventually continued, albeit sans all male participation and any photography.

### ***Peer-to-Peer Classroom Networks***<sup>30</sup>

One tenet underlying the AL approach to educational achievement is active, student-centered instruction, being responsive to students' particular skills, abilities, needs, and interests. It involves working with students in different groups, applying learning to concrete situations or with concrete materials, and reinforcing participation and learning through peer networks. We believe this is an important lever for enhancing and reinforcing girls' education inside and outside the classroom. In our longitudinal-study interviews and classroom observations, we found 76% of the peer networks seemed to result from the teacher asking that students help one another. In 50% of the classes, observers noted that teachers structured assignments to be completed in small groups. They also noted that peer-network learning emerged naturally from teacher and student interaction in 59% of classes. When interviewers asked whether students received assistance from classmates, almost everyone in both gender groups (99% of the boys and 97% of the girls) answered *yes*. (Notably, these percentages remained high, but were gender-reversed, when students were asked whether they, themselves, ever helped other classmates.)

Interestingly, we saw that teachers are more likely to assign group work in male classes and males are more likely to report both that they ask for and receive help ( $p < .02$ ). Girls, on the other hand, are more likely to report they initiate collaborative work themselves without the teachers' encouragement.

### ***AL Students' Aspirations***<sup>31</sup>

The AL Longitudinal Study data (ALLS) show that AL students have high, gender-neutral aspirations for education and occupation.

#### ***Educational Aspirations***

Table 12 demonstrates that, not only is there no shortage of females who want an advanced degree, but the percentage is increasing with greater exposure to educational opportunities. At the end of Grade 1, more than a third of the girls want to continue through high school; and more than half want to continue through college. By the end of grade 2, almost two-thirds of the girls want to complete university or beyond. While there is no reason to expect that male and female aspirations would be significantly different, and indeed they are not, we expect that the barriers to realizing their aspirations, such as the proximity of schools and economic constraints already discussed, affect the genders differently, in particular the distance of the school from the home community. While 55% of the respondents (both boys and girls) mentioned distance as an issue, in their comments about what single thing would inhibit their continuation, 52% of the female students identified distance from school as a major barrier whereas none of the boys mentioned it. Boys mentioned the need to work and age eligibility more often than did girls.

<sup>30</sup> Findings from analyses of ALLS Items e10, at the end of Grade 2.

<sup>31</sup> ALLS Q. P-4 through P-7 are designed to solicit the students' educational aspirations, while Q. Z-7 and Z-8 are seeking the students' vocational training interests.

**Table 12: Girls' and Boys' Educational Aspirations**

Educational Aspiration	Girls		Boys	
	% End of Grade 1	% End of Grade 2	% End of Grade 1	% End of Grade 2
Primary school completion	4	0.5	2	1
High School completion	35	37	27	28
College Degree	55	40	68	48
Advanced Degree	4	23	1	23
Can't Say	1	-	2	-

In general, however, students' responses to the ALLS show a high level of parental support and a strong awareness of education as an important investment for the future,<sup>32</sup> and girls' aspirations regarding continuing education are similar to those of boys.

### **Occupational Aspirations**

There were no significant differences between the genders regarding aspirations to become doctors, managers, shopkeepers or other generally technical occupations. We did see occupational preferences in that girls were more likely to choose teaching, and boys were more likely to select specifically technical occupations other than Engineer.

Two traditional and highly prestigious professions dominated students' answers about their occupational aspirations: 39% said they wanted to become a teacher and 32% said they wanted to become a doctor; 7% said they were interested in a managerial or technical job; 3% professed interest in becoming an engineer; and 2% aspired to more traditional occupations, like farming, migrant labor or being a shopkeeper. Miscellaneous career ambitions included journalist, *mullah*,<sup>33</sup> airplane pilot, calligrapher, and professor of literature. One student stated specifically that her aspiration was to become the head of her village's women's *Shura*. Several other students had more practical aspirations, stating a desire to continue their educations and to have traditional careers as tailors.

More than half of the AL students are interested in vocational training as an alternative to high school and university-level education. But, here too, their aspirations following vocational training were provincial. Two-thirds (67%) of the ALLS respondents who were interested in vocational training named tailoring, embroidery, or carpet-weaving. Of course Afghanistan's labor market and business environment could not provide adequate employment for so many workers in these traditional occupations. More contemporary occupations mentioned in connection with vocational training include auto mechanics, carpentry, metal work, and driving, as well as journalism, teaching, and engineering. While the latter three occupations are often thought of as requiring a university-level education, in fact, the areas also offer careers where medium-term vocational training might well be effective.

<sup>32</sup> Seventy percent of students believed education was important for the future, and 40% felt their parents wanted them to continue with their education.

<sup>33</sup> Religious leaders in the community.

### Outcomes: How Girls Do in AL Classes<sup>34</sup>

The M/E system measures outcomes in two dimensions: sustained participation in the class and academic performance. The APEP M/E unit tracks the students' attendance, dropout, completion, and performance records as part of its responsibilities. In all of these areas, AL female students perform at the same level or better than, the AL male students.

### Attendance and Participation

There is no statistically significant difference between the profiles of males and females attendance or dropout levels; and the dropout rate is low. Compared to the formal schools, we estimate that, so far, the APEP AL class dropout rate is half that of the formal schools.<sup>35</sup> We should note here, however, that the AL dropout rate may not actually be as low as was recorded, because, during the M/E site visits, we observed that some of the absenteeism and dropouts are not reported because, "it would discourage the students." Nevertheless, even with a 4-5% adjustment for reporting discrepancies, we calculate that the APEP AL class dropout rate falls well below that of the formal schools. Table 13 presents the findings.

**Table 13: AL Students' Attendance and Dropout Rates Compared to Formal Schools<sup>36</sup>**

Indicator	# of Students	%	Mean (Std. Dev) Per class	# (%) of Classes Affected
<b>OVERALL APEP STUDENTS</b>				
Total absent any time	20,944	13	3.15 (6.48)	1,958 (29)
▪ Absent 15 days or less	18,655	11	2.81 (6.06)	1,784 (27)
▪ Absent 16 days or more	2,289	1	0.34 (1.41)	680 (10)
Total dropout students	3,217	2	0.48 (1.60)	928 (14)
<b>APEP STUDENTS BY GENDER</b>				
	N	Gender	Mean (std. dev.)	N (%) classes
▪ Total Males absent any time	7,984	11	1.20 (4.12)	898 (13)
▪ Males absent 16+ days	1,123	2	0.17 (1.08)	320 (5)
▪ Females absent any time	12,960	14	1.95 (5.18)	1,292 (19)
▪ Females absent 16+ days	1,166	1	0.17 (0.89)	396 (6)
▪ Total Male dropouts	1,447	2	0.22 (1.12)	409 (6)
▪ Total Females dropouts	1,770	2	0.27 (1.13)	565 (8)
<b>Formal School Students for 2003-4, Average Dropout Rate Per Year</b>				
▪ Average Dropout, Boys, Grades 1- 4	2,211,832	11	N/A	
▪ Average Dropout, Girls, Grades 1- 4	1,132,668	15		

<sup>34</sup> Intili, J., Hamdard, D.M., Wafa, W., Mehry, A., Ghiassi, E., Hadi, P., Akbari, P., Khalid, S., Nasir, S and T. Hernandez, (2005). *Young Minds Blossom After Years of Turmoil; APEP's Accelerated Learning Program at 2<sup>nd</sup> Grade*. Kabul: APEP Consortium, Library items 130 and 131; Kissam, E, Wafa, W, Hamdard, D.M., Nasir, S. Akbari, P. (2005). *Report on APEP Accelerated Learning Program Student Achievement in Grade 1*. Kabul: APEP Consortium, Library item #35.

<sup>35</sup> Based on UNICEF WFP MICS, 2005, and UNICEF WFP NRVA, 2005.

<sup>36</sup> See Intili, J. (2005); contact [jintili@aiweb.com](mailto:jintili@aiweb.com) for more information about the APEP M+E instruments. MoE statistics Based on UNICEF WFP Rapid Assessment Survey (RAS) data for 2003-4, provided in March 2005

### ***Academic Performance***

APEP measured student outcome achievements through a project-generated competency test, which ALLS interviewers administered to students as part of the ALLS study. The competency test assessed students' reading, writing, and mathematics skills. The test items were drawn from the MOE approved textbooks and included items from the Grade 1 textbook/curriculum, and grade 2 curriculum. Additionally, several tasks were designed to assess students' abilities to apply basic knowledge and skills to novel circumstances.<sup>37</sup> For the purposes of this assessment, students were expected to obtain a 50% score to be considered at grade level.<sup>38</sup> Interviewers observed students as they answered the questions and scored them on each as *fail*, *pass*, or *facile*. Students who successfully answered a question were given a pass and students who answered the question with great facility without hesitation were rated facile. Students who successfully answered all of the Grade 1 questions and at least one of the more advanced questions were considered to be above grade level.<sup>39</sup>

Findings from these analyses showed female students mastered the competencies at the same rate as male students.

- **In Grade 1**, female mean scores are consistently, but only slightly, higher than male mean scores in reading and writing; but the female mean scores are slightly lower than the male scores in math.
- **In Grade 2**, female mean scores are at the same level in math and general knowledge and statistically higher in reading and writing, than their male counterparts.<sup>40</sup>

Table 14 shows the proportions of AL students whose performance would rate a *pass* based on MOE criteria of at least 50% on an end-of-term test developed by teachers for their students.<sup>41</sup> Table 14 shows the AL program continues to support impressive achievements in teaching reading and math, and, at a more moderate rate, to improve the teaching of writing skills, a the core subject where slightly more students had problems in grade 1.

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<sup>37</sup> For more details on testing and methodology, see Kissam, E., *et al.* (2005). These items included four reading tasks where students were asked to read novel sentences that are not contained in the Grade 1 textbook; three novel sentence-writing tasks; and four mathematical word problems that were either drawn from the Grade 2 textbook or developed by the APEP M&E staff.

<sup>38</sup> For more details on testing and methodology, see Kissam, E., *et al.* We chose this cut-point to standardize our pass-fail criterion for all items, using the same general criteria used by the MOE. The formal school system, quite appropriately, does not consider Grades 1 and 2 to be *pass/fail* grades. However, the MOE only establishes guidelines while individual teachers determine their own test items for assessing students' competency and their own criteria for pass/fail grades.

<sup>39</sup> A validation of researchers' scoring was undertaken with half the students in one province, and the scoring was found to be consistent with the scoring categories and their definitions.

<sup>40</sup> Female mean scores are .94 points higher in reading ( $p < .001$ ) and .73 points higher in writing ( $p < .02$ ) than are male mean scores.

<sup>41</sup> The APEP M/E Unit believes that the ALLS student performance assessment is a more demanding instrument than that used in the typical formal school system. APEP is still in the process of collecting samples from the formal school system so that a comparison can be validated.

**Table 14: AL Students 2nd Grade Performance: All Subjects (N=546)**

Performance Level	2 <sup>nd</sup> Grade Reading	change from 1 <sup>st</sup> Grade Reading	2 <sup>nd</sup> Grade Writing	change from 1 <sup>st</sup> Grade Writing	2 <sup>nd</sup> Grade Math	% change from 1 <sup>st</sup> Grade Math
<b>% At least Pass</b> Adequate Mastery = four or more items correct	94	+2 (was 92)	91	+7 (was 84)	97	+3 (was 94)
▪ for Girls only	96	+4	92	+7	97	+3
▪ for Boys only	92	No change	89	+7	97	+3
<b>% At Least Full Mastery</b> - 7.3 or more items correct	83	+8 (was 75)	80	+13 (was 67)	82	-3 (was 85)
▪ for Girls only	86	+10	83	+15	81	-3
▪ for Boys only	77	+5	75	+11	83	-2
<b>% Above Grade Level</b> – nine or more items correct	76	+10 (was 66)	78	+24 (was 54)	76	+4 (was 72)
▪ for Girls only	80	+12	80	+25	75	+5
▪ for Boys only	67	+6	72	+22	78	+2

There is also a statistically significant relationship between student age and AL outcomes. Older students tend to achieve higher scores. In this analysis, we compared mean scores in math, reading, writing, general knowledge, and overall for three age groups; students who were 10 years old or younger; 11-14 years old; and 15 years old or more. The relationship between age and outcomes is more complex than between gender and outcomes. First, there were statistically significant differences among all age groups in math. But, in reading and writing, the performance outcomes between the age groups varied. Students who were 10 years old or younger were statistically indistinguishable from 11-14 year olds, but students 15 years and older did much better on average. At the same time, it is important to recognize that, although the oldest group has statistically higher performances than the two younger groups combined, even the younger students are doing very well. Table 15 shows the mean scores for these different age sub-groups within the AL student populations. Note that a score of 4 in any sub-scale is considered a *pass*, following Afghan government school standards; and a score of 8 is *full proficiency for the grade level*. Across subject areas, a composite score of 16 is rated a *pass* and a score of 32 is rated *full proficiency*.

**Table 15: Mean Scores of AL Students by Age at the end of Grade 2**

Skills Area	<11 years (N=135)			11 to 14 years (N=280)			15 or older (N=131)		
	Overall	Females	Males	Overall	Females	Males	Overall	Females	Males
Reading	9.90	9.98	9.69	10.07	10.48	9.24	10.93	11.17	10.33
Writing	9.46	9.44	9.50	9.74	10.03	9.16	10.60	10.95	9.76
Math	9.06	8.95	9.34	9.81	9.93	9.58	10.63	10.66	10.59
General Knowledge	10.36	10.47	10.11	10.65	10.84	10.27	11.30	11.38	11.12
<b>Total Score</b>	<b>38.79</b>	<b>38.84</b>	<b>38.64</b>	<b>40.28</b>	<b>41.28</b>	<b>38.25</b>	<b>43.47</b>	<b>44.15</b>	<b>41.78</b>

This relationship between age and performance was observable in overall scores. Although all AL students perform at least adequately to pass, the students 14 and younger seem to perform less well

than the students 15 and older. This suggests that some of the older students have made progress in skills development on their own as well as in school, and that their AL success relates to instruction which builds on prior, albeit rudimentary, foundations of math, reading, writing, and general knowledge.

### **Summary**

Student performance indicates that the APEP AL program was able to overcome traditional gender inequities for the participating female students, assuring them equitable access and quality of service, as measured by outcomes. This required hard work and an ongoing process of pro-active fostering, monitoring and mentoring. In talking with the few students in the longitudinal study sample who either dropped out or are chronically absent, we find that the females fear being photographed, feel the community's disapproval, must work, or that their parents fear attending will create a breach of their security. In this context, work often refers to family responsibilities. Although a high proportion of parents have supported their children by lightening their household burden so that they can go to school, time constraints remain a significant hindrance. This becomes compelling when the community attitude runs cold because the AL class is either not going well or attracting negative attention. A seemingly natural respect for education is darkened by cynicism about how education will benefit the student and the family immediately.

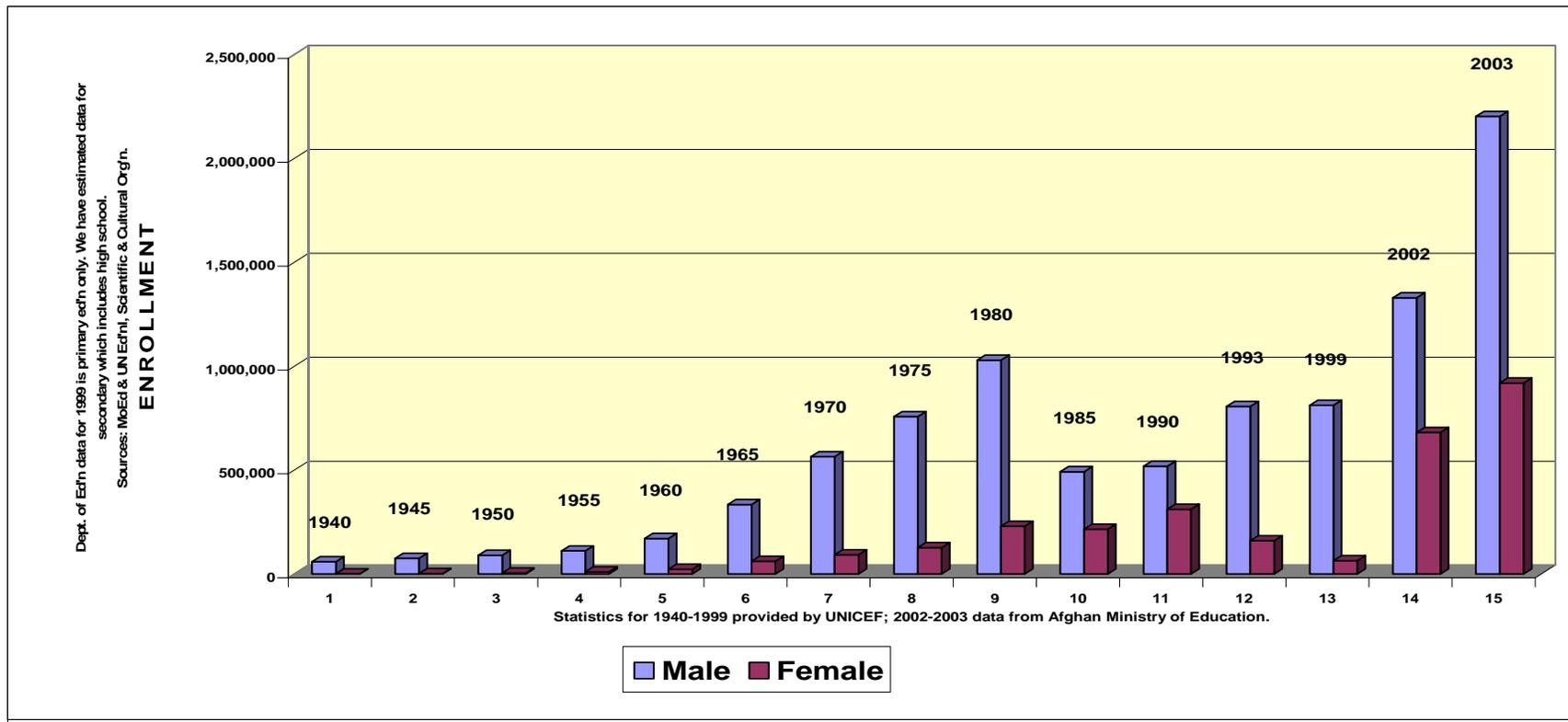
Given these Afghan labor-market realities and the constraints on access to university-level education needed to enter professional careers, fostering female education will require that parents believe that the investment is worth the risks, whether they are security risks or the risk of a family's good reputation, or the time that is no longer spent doing chores or other home-based money-generating ventures. For example, if a daughter has learned to read and can subsequently protect the family from signing a bad contract or help family members use the postal system or the bank, this will be perceived as a benefit of her education. It would be wise for the APEP program to widen the AL curriculum to include a broader spectrum of occupational options, with a special emphasis on technical careers, where skilled workers are needed for economic development, and where education or training takes only 1-2 years, as opposed to lengthy university courses of study in medicine, teaching, or engineering.

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**Appendix 1: Growth of Female and Male Education in Grades 1-12 in Afghanistan 1940-2003 (Formal Schools)**

	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1993	1999	2002	2003
Male	59,100	75,000	90,640	111,100	170,845	334,074	564,090	757,030	1,028,730	492,440	517,970	805,970	886,532	1,329,340	2,201,622
	98.5%	97.4%	95.4%	91.7%	88.1%	84.5%	86.0%	85.6%	81.7%	69.6%	62.5%	83.4%	92.7%	66.1%	70.6%
Female	900	2,000	4,350	9,990	23,155	61,394	92,030	127,345	229,690	215,390	311,220	160,360	64,110	680,660	918,843
	1.5%	2.6%	4.6%	8.3%	11.9%	15.5%	14.0%	14.4%	18.3%	30.4%	37.5%	16.6%	7.3%	33.9%	29.4%
Total	60,000	77,001	94,991	121,091	194,001	395,469	656,121	884,376	1,258,420	707,831	829,191	966,331	950,643	2,010,001	3,120,466
Male	59,100	75,000	90,640	111,100	170,845	334,074	564,090	757,030	1,028,730	492,440	517,970	805,970	811,495	1,329,340	2,201,622
Female	900	2,000	4,350	9,990	23,155	61,394	92,030	127,345	229,690	215,390	311,220	160,360	64,110	680,660	918,843



# IMPACT OF NEW HORIZONS FOR PRIMARY SCHOOLS ON LITERACY AND NUMERACY IN JAMAICA 1999-2004<sup>1</sup>

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## **Citation**

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## **Abstract**

In school year 1998-1999, the United States Agency for International Development fully rolled out the New Horizons for Primary Schools Program (NHP) for approximately 10% of the most poorly performing schools in Jamaica. The program was designed to improve the quality of teaching in these primary schools, to raise literacy and numeracy levels, to increase school attendance and to strengthen school management. The first cohort of students to attend NHP schools for all or most of Grades 1-6 completed Grade 6 in 2004. This report examines how NHP affected student learning achievement and discusses the data requirements for more rigorous analyses.

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## **Section 1. Background and Key Research Questions**

The New Horizons for Primary Schools program (NHP) was initiated in school year 1997-98 and fully rolled out in school year 1998-99. The objective of the program was to improve the language and mathematics performance of 72 of Jamaica's poorer performing schools through a school-based model of intervention. School improvement plans (SIPs) were to be developed for each school, with interventions selected from a menu of ten project interventions (see Box 1) in accordance with each school's need.

### **Box 1: New Horizons Interventions**

1. Developing innovative mathematics and literacy programs
2. Providing in-service teacher training in reading and mathematics
3. Providing governance and leadership training for schools, communities, parents
4. Offering parent education and training
5. Facilitating selective nutrition and health programs
6. Providing reading and mathematics materials
7. Establishing computer use in school and training teachers in educational technology
8. Training resource teachers
9. Integrating databases using MIS
10. Improved school management through EMIS

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<sup>1</sup> This paper was presented as a project evaluation to USAID.

Lead institutions were identified for each of the NHP interventions, with an institutional contractor taking responsibility for all but three of the interventions. The Professional Development Unit (PDU) of the Ministry of Education, Youth and Culture (MOEYC) was responsible for training of resource teachers and the MOEYC in partnership with the National Council on Education (NCE) was responsible for providing governance and leadership training for schools, communities and parents and for offering parent education and training. In the spring of 1999, a diagnostic survey of all NHP schools was undertaken to assess the schools' training and other needs (Juarez and Associates, June 1999).

Systematic evidence regarding the extent to which various interventions were implemented in the NHP schools is modest but shows improvement over time. Some evidence comes from evaluations of School Development Plans (SDPs), which are the "focal point of NHP's approach to school governance" and also are essential in the needs assessment process (Dye *et al.*, 2002, p. 11). One evaluation codified the quality of literacy and numeracy initiatives in SDPs for NHP schools as of November 1999, based on SDPs received from approximately three-quarters (56 of 72) of the NHP schools; of these, the quality of fewer than 20 percent was judged "satisfactory" and the quality of approximately 40 percent was judged "weak" (Juarez and Associates, December 1999). Approximately half the SDPs included a statement of actions that the school would take to reach their specific literacy or numeracy attainment target. The report notes that "very few schools appear to be in a stated position of readiness to deal with literacy and numeracy in their schools" (Juarez and Associates, December 1999). This number was apparently higher a few years later. An analysis of 56 SDPs in 2003 judged all but four of them to be "good" or "very good" (Summary Evaluation of School Improvement Plans (SIP) of NHP, Spring 2003). This later evaluation, however, noted that half (28 of 56) of the NHP schools for which SIPs were available lacked the desired three-year action plan for implementation of the program.

As anticipated, the NHP interventions were not implemented uniformly across all 72 schools; implementation varied across schools in accordance with local needs. For example, only 14 of the 72 schools received breakfast programs. The intensity of the interventions also varied, with training program duration lasting from a few hours to several days. Table 1 summarizes the main features of the implemented program.

**Table 1. Features of NHP as Implemented by 2003**

<b>Intervention</b>	<b>Implementation</b>
Developing innovative mathematics and literacy programs	<ul style="list-style-type: none"> <li>▪ 100s of site visits, deployment of 16 "NHP Associates" to work at classroom level</li> </ul>
Providing in-service teacher training in reading and mathematics	<ul style="list-style-type: none"> <li>▪ Consolidated with #8</li> </ul>
Providing governance and leadership training for schools, communities, parents	<ul style="list-style-type: none"> <li>▪ Procurement of governance and Leadership Coordinator and Officers</li> <li>▪ Examination of SDPs</li> <li>▪ Site visits in 60 NHP schools</li> <li>▪ Finalize Manual on Governance and Leadership Training for School Boards and Principals</li> </ul>

	<ul style="list-style-type: none"> <li>▪ NHP Principals' Workshops</li> <li>▪ Other training</li> </ul>
Offering parent education and training	<ul style="list-style-type: none"> <li>▪ National Parenting Conference (1999, 2002)</li> </ul>
Facilitating selective nutrition and health programs	<ul style="list-style-type: none"> <li>▪ Subsidy of breakfast program in 14 schools</li> <li>▪ Community mobilization to sustain program</li> <li>▪ Teacher training on integrating health and nutrition in teaching of core subjects</li> <li>▪ Nutrition Specialist and community development specialist.</li> </ul>
Providing supplementary reading and mathematics materials	<ul style="list-style-type: none"> <li>▪ Supplementary materials and equipment distributed to schools</li> </ul>
Establishing computer use in school and training teachers in educational technology	<ul style="list-style-type: none"> <li>▪ Five "technology-intensive" NHP schools established</li> <li>▪ Two three-day and one overlapping six-day Educational Technology Workshops held for teachers in 5 NHP schools (2002)</li> <li>▪ One-week consultancy on use of technology for student literacy</li> <li>▪ Consultations with 72 school principals on incorporating technology into SIPs</li> </ul>
Training resource teachers	<ul style="list-style-type: none"> <li>▪ Trained 180 Mathematics and Literacy Resource Teachers in workshops and in-school training activities</li> </ul>
Integrating databases using MIS	<ul style="list-style-type: none"> <li>▪ Jamaica School Administration System software 5.0 was developed and used in NHP schools (and a staged rollout across Jamaica is planned).</li> <li>▪ Support guides and training manuals for 200 non-NHP schools prepared</li> </ul>
Linking Project Schools to EMIS Network	<ul style="list-style-type: none"> <li>▪ 25 large and medium schools received additional computers (2002) and 140 computers were networked</li> </ul>

Source: O'Neil, October 2003

Over the period of implementation of the NHP a large number of formative and other evaluations have been carried out; nearly 100 have been catalogued by the Curriculum and Support Services Unit of the MOEYC (O'Neil 2003). However, none of these studies has addressed, in a comprehensive manner, a series of questions posed by USAID:

1. Have NHP schools made achievement gains over the years under review?
2. What factors in the project schools may have affected gains or lack of gains?
3. Is the use of mastery/near-mastery/non-mastery categories on the Grade Six Achievement Test (GSAT) masking real gains in student achievement in schools?

4. Is the GSAT the best measure of student performance for the project schools, considering that it is based on the content delivery system of the old curriculum?
5. How can valid measures of students' computational skills in numeracy be assessed for students who are unable to comprehend the language in which most numeracy items are couched in the GSAT examination?
6. How has "social promotion" to Grade 6 affected average performance results among students?
7. How effective were the indicators used for tracking the results of the NHP and what suggestions could be made for the future?
8. How effective are the methodologies used to collect data?

The present report addresses these questions. Section 2 examines the effects of NHP on student achievement, 1999-2004 and explores school factors that may have affected achievement changes over this time frame. Section 3 addresses issues related to student performance measures and social promotion and achievement. In Section 4 we consider a number of issues related to data collection and indicators. Section 5 presents our conclusions and recommendations.

In carrying out this evaluation, we utilized six school years of archival data, 1999-2004, from school censuses and the Grade Six Achievement Test (GSAT). We also reviewed key implementation and evaluation documents related to the NHP.

## **Section 2. Effects of NHP on Student Achievement**

Two key evaluation questions dealing with achievement were posed by USAID:

- Have NHP schools made achievement gains over the years under review?
- What factors in the project schools may have affected gains or lack of gains?

In addressing these questions, we compare the performance of NHP schools both with that of all other government schools in Jamaica having primary sections and with that of a set of matched schools in which the NHP was not implemented. The only student performance data that were available for comparison across the two groups were Grade Six Achievement Test data. Two tests assessing performance in earlier grades – the Grade Three Diagnostic test and the Grade Four Literacy test – were administered in all schools in Jamaica, but results were not consolidated nationally and therefore could not be used in this analysis. Since the NHP program is intended to improve literacy and numeracy, we focus on four of the GSAT tests that measure these skills: language arts, mathematics, and writing (Communications Task I and Communications Task II).

Comparing NHP schools with other government schools allows us to see whether the apparent decline in GSAT scores in NHP schools is unique to program schools or is a phenomenon shared across schools in Jamaica. Comparing NHP schools with a matched set of non-NHP schools allows us to address the central question of the NHP's impact on student achievement as measured by GSAT.

### ***How do NHP Schools Compare with all Government Schools in Jamaica Having Primary Sections?***

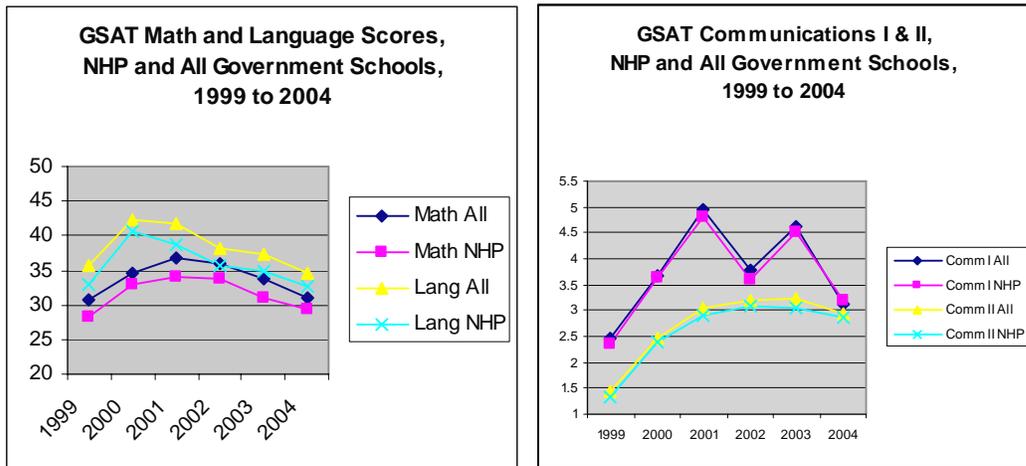
NHP was initiated in 1998 and rolled out in 1999. The program itself may have been fully operational in only about three-quarters of the schools as late as school year 2003. The effects of NHP on student performance on the Grade Six Achievement Test (GSAT) are not likely to be observed until after this time for two reasons. First, even if the program had been fully operational since 1999, the first cohort of primary students given the opportunity to attend NHP schools for all or most of grades 1-6 would have entered grade 1 in 1998 and completed Grade 6 only in 2004; they

would have taken the GSAT in that year. Second, incomplete implementation until after 2003 would have delayed observing NHP effects on GSAT even further; students entering grade 1 in 2003 would not take the GSAT until 2008. If student performance data from earlier grades were available, effects of NHP might be observed for student cohorts entering grade 1 in 2000 or 2001; these data, while collected locally, are not routinely aggregated centrally and were therefore not available for analysis.

GSAT performance of students in NHP schools parallels that of students in all government schools in Jamaica having primary sections. Raw GSAT scores for all schools increased from 1999 to 2001 and then dropped gradually through 2004 (figure 1). This is largely due to the impact on scores of a changing population of test-takers, following the elimination of the Common Entrance Examination (CEE 11+) after 1998. The CEE 11+, a selection test for secondary education, was administered to students within a given age range, without regard to the grade in which they were enrolled. As a consequence, a significant share of students took the CEE in Grade 5; if they passed the examination in Grade 5 they advanced to Grade 7 at the secondary level without taking Grade 6. Thus, the CEE 11+ skimmed off the higher performing student from Grade 6. Often students who did not pass the CEE 11+ the first time had the opportunity to retake the test the following year.

When the GSAT replaced the CEE 11+ in 1999, the higher performing students who would have been in Grade 6 in 1999 were already in Grade 7 and did not take the GSAT, depressing average scores. Scores on GSAT would naturally rise over the next two years, as Grade 6 included a higher share of higher performing students than in the past. We discuss this phenomenon in Section 3 in the context of changes in the age composition of those taking the GSAT. The mean scores of students in NHP schools showed the same pattern of rise and fall, although at a lower level in most years.

**Figure 1. GSAT Mathematics, Language arts and Communications I & II scores in NHP and government schools with primary sections, 1999-2004**



Moreover, since GSAT scores were not equated from 1999 to 2004 (sometimes intentionally), the 1999-2004 trend data do not accurately represent change in achievement over time but rather represent changes in the tests as well as changes in the test takers. Equating issues are discussed in Section 3. It is necessary to compare the performance of students in NHP schools with the performance of students in comparable non-NHP schools to accurately assess the impact of NHP on performance.

### ***How do NHP Schools Compare with Matched non-NHP Schools?***

We use propensity score matching to identify a set of government schools in Jamaica that were matched with NHP schools in 1999 across a wide range of characteristics, but that did not participate in the program. Propensity score matching is discussed in Annex A.

Of the 72 NHP schools, we were able to match 70 with equivalent schools not participating in the program. To the extent possible, using school census data available for all government schools in Jamaica, we matched schools on the basis of eight criteria that were initially used to place schools in the program: (a) performing at or below the national mean in language and mathematics in the National Assessment Programme, (b) performing at or below the national mean in language, mathematics, science and social studies in the National Assessment Programme, (c) geographic location, (d) evidence of Board, or principal and teachers taking action to address the under-achievement of students in the school, (e) active functioning School Board or SCOPE Committee, (f) recipient of grant for Jamaica School Investment fund or civil works in the IDB PIEP project, (g) potential for providing inspiration and leadership in the project, (h) participation in other initiatives complementary to the project. In 1998, 194 schools met these criteria (PIU, December 1998) and were eligible for selection; data related to some of these criteria were included in the 1998 School Census for all schools.

In addition, we identified four other characteristics of schools and teachers that we hypothesized were important determinants of student achievement and for which we could obtain data from the School Census: (a) teacher quality, (b) teacher experience, (c) poverty level of school community, and (d) size of school. These twelve characteristics and the data sources for each are summarized in table 2.

Because not all selection criteria were supported by data from the annual School Census, and because some of the selection criteria required expert judgment, we included “program eligibility” in the logit regressions for establishing the matched non-NHP comparison group.

The propensity score matching worked relatively well, with 97 percent of the NHP schools matched with non-NHP schools; approximately two-thirds of the matches were very close, with scores matched to the second decimal point or better. Detail on the propensity score matching approach can be found in Annex A.

The non-NHP schools were well-matched with the NHP schools at the outset of the program. Inspection of school, teacher and student characteristics of the NHP and matched non-NHP schools as of 1999 demonstrates the similarity of the two sets of schools. For none of the initial 1999 characteristics, including average student performance on the GSAT, are there statistically significant differences between the two groups (see Annex A for details). By 2004, however, differences are emerging on the GSAT. Since we theorize that the impact of NHP would not be observable in GSAT scores prior to 2004, we concentrate on this year.

**Table 2. Criteria for School Selection into NHP Program**

<b>NHP Selection Criteria</b>	<b>Indicator from School Census or GSAT</b>
Performing at or below the national mean in language arts and mathematics in the National Assessment Programme,	School mean GSAT Scores on language arts and mathematics, school year 1998-99
Performing at or below the national mean in language arts, mathematics, science and social studies in the National Assessment Programme,	School mean GSAT Scores on language arts , mathematics, science and social studies, school year 1998-99
Geographic location	School Census: Classification of school as rural, remote rural
Evidence of Board, or principal and teachers taking action to address the under-achievement of students in the school,	None
Active functioning School Board or SCOPE Committee,	School Census: presence of School Board or SCOPE Committee
Recipient of grant for Jamaica School Investment fund or civil works in the IDB PIEP project,	None
Potential for providing inspiration and leadership in the project,	None
Participating in other initiatives complementary to the project.	None
<b>Other school factors</b>	
Teacher quality in Grades 1-6	School Census: Percent teachers with CXC as highest level of school attainment
	School Census: Percent master teachers in school
Teacher experience in Grades 1-6	School Census: Average number of years experience as a teacher
	School Census: Average number of years experience in the school
	School Census: Percent teachers with less than two years experience
Poverty level of school community	School Census: School breakfast program
Size of school	School Census: Number of teachers, Grades 1-6
	School Census: Number of students, Grades 1-6
	School Census: School on Shift
PTA	School Census: presence of PTA

We compare NHP schools with non-NHP schools in three different ways. First, we examine the mean scores of schools in 2004, using matched pair t-tests, which are more sensitive to change than simple t-test comparisons of means. Second, we use a simple OLS regression of school means, where the dependent variable is the school mean GSAT score in 2004 and the NHP program is considered an independent variable, with the school mean in 1999 as a control. Finally, we classify the schools

according to their mean scores and compare the two groups (NHP and matched non-NHP) according to the share of each group in high, medium and low categories of achievement.

#### *Matched Pair t-tests*

In the first analysis, we found that NHP schools outperformed matched non-NHP schools on one of four GSAT 2004 tests.<sup>2</sup> We compared average 2004 GSAT scores in language arts, mathematics and writing (Communications Task I and Communications Task II) for 70 NHP schools with those of a matched set of 70 non-NHP schools. The approach used was matched pair t-tests (difference of differences). The figures in table 3 are raw scores, and the maximum score for the mathematics and language arts tests (80 points) is different from the maximum score for the writing tests (6 points). The GSAT-2004 results show a possible positive impact of the NHP program with respect to improvements in writing at the “basic” level (Communications Task I). The average score of NHP schools in 2004 is nearly 15 percent higher than that of the matched non-NHP schools and this difference is statistically significant ( $t = 2.31, p < .03$ ). No significant difference was observed for the other tests, however (table 3).

**Table 3. NHP program effects on school mean GSAT scores in 2004, matched pair t-tests**

<i>2004 GSAT</i>	<b>New Horizon Program School</b>	<b>Matched Non-New Horizon Program School</b>	<b>Matched pair t-test</b>
Mathematics	29.3	29.2	n.s.
Language Arts	32.6	32.9	n.s.
Communications Task I	3.2	2.8	2.31, $p < .03$
Communications Task II	2.9	2.8	n.s.

Scatter plots showing the 1999 mean school achievement and the 2004 mean school achievement, for NHP and matched non-NHP schools can be found in Annex C. They show the slight positive effect of NHP on achievement in these initially lower performing schools.

#### *OLS Regressions*

OLS regressions confirmed the effect of NHP on Communications Task I scores. We tested for the impact of NHP on 2004 GSAT scores through OLS regressions, controlling for school mean 1999 scores on the same tests. The results of these regressions are shown in table 4, which show the unstandardized regression coefficients (standard error in parentheses) and confirm the previous analysis. Controlling for school average student performance on the GSAT Communications Task I in 1999, student performance in schools participating in the NHP program was higher in 2004 on the Communications Task I assessment. Program effects are not statistically significant for other tests.

<sup>2</sup> Because the objective of the NHP was to improve literacy and numeracy, this analysis focuses on tests measuring these skills. We did not, therefore, analyze GSAT Science and GSAT Social Studies tests. Results for all tests appear in Annex B.

**Table 4. NHP program effects on school mean GSAT scores in 2004, OLS regressions**

Dependent variable:	Unstandardized regression coefficient (standard error in parentheses)			
	2004 Math	2004 Language	2004 Comm. I	2004 Comm II
1999 School mean score	0.39** (0.11)	.27 (.96)	-.005 (.18)	.32* (.16)
School in NHP	-.006 (0.93)	-.47 (9.6)	.37* (.16)	.009 (.100)
Constant	18.4** (3.17)	24.24** (3.08)	2.93** (.45)	2.35** (.22)
R-square	.08	.06	.04	.04
Adj. R-square	.07	.04	.03	.02
Cases	140	140	140	140

\*\*  $p < .01$ ; \*  $p < .05$

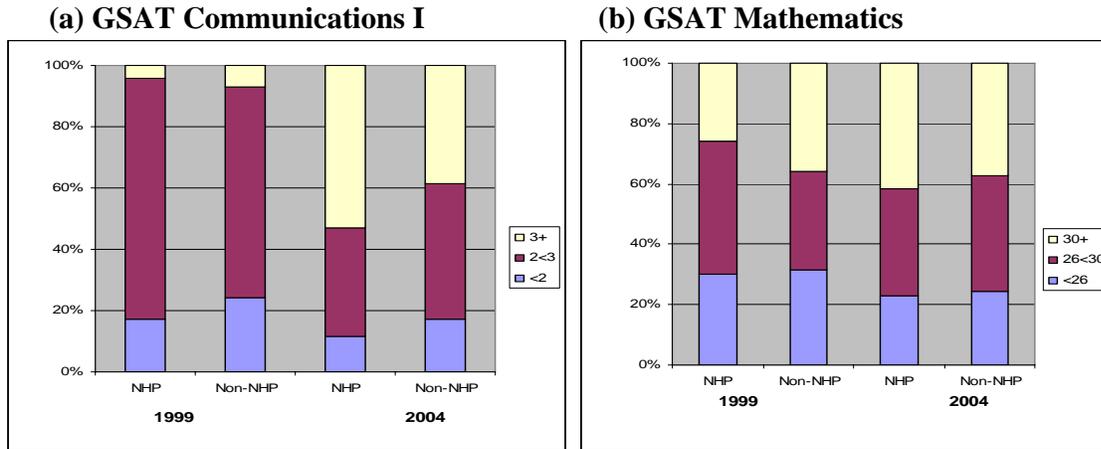
#### *Non-parametric Tests of Differences*

Our final test, which involved classifying schools according to their mean performance on GSAT tests, and comparing the NHP schools with the matched non-NHP schools in 1999 and 2004, revealed a small gain for GSAT Mathematics, in addition to Communications Task I.

For Communications Task I, the share of NHP schools with mean scores greater than three points (on a six-point scale) increased from four percent in 1999 to 53 percent in 2004; the share of matched and non-NHP schools with mean scores greater than three points increased from seven percent to 39 percent (figure 2a). Again, the tests may have not been fully equated, but the difference between NHP and matched non-NHP schools in gain was statistically significant ( $p < .05$ ).

Surprisingly, for GSAT Mathematics, the share of NHP schools in the higher category also improved, from 26 percent of schools having means GSAT Mathematics scores of 30 points or more in 1999 to 41 percent of schools in 2004, compared with essentially no gain for matched non-NHP schools (36 percent of schools in 1999 with mean scores of 30 points or more to 37 percent of schools in 2004). This difference was also statistically significant (figure 2b).

**Figure 2. Share of schools at three levels of performance on two tests, NHP and matched non-NHP schools, 1999 and 2004**



By comparing NHP schools with a matched group of schools that did not participate in the program, and by examining performance improvements that occurred well below the “near mastery” level, it is possible to see a small achievement impact from the program. NHP appears to have boosted student writing skills and mathematics performance, albeit at lower levels of performance, as assessed by the GSAT.

***School Factors that may Explain NHP Performance Advantage***

We examined two sets of factors that may have explained the NHP performance advantage: (a) School Development Plans, and (b) inputs in non-NHP schools that may have been provided by other programs.

***School Development Plans***

School Development Plans (or School Improvement Plans) are a key aspect of the NHP program and may also be considered a proxy indicator for principal leadership. The objective of SDPs/SIPs is for the school to analyze its needs and set out an action plan to address these needs. We noted above that 20 percent of schools had actionable SDPs in 1999 and that this had increased to 72 percent of schools in 2003. We selected the sub-group of NHP schools that had “good” or “very good” SIPs in 2003 to see if the effects of NHP were more pronounced in these schools than in the remaining NHP schools. We found that the effects for NHP were similar in these schools to those for all schools (table 5). That is, the 50 NHP schools with good SDPs/SIPs achieved higher performance than their matched non-NHP schools, but the raw scores are no different from those reported above in table 3.

We conclude that SDPs/SIPs, and the principal leadership they imply, may account for the NHP advantage, but that other factors may also be responsible. We do not have information about whether the matched schools also had SDPs/SIPs.

**Table 5. Impact of SIPs on school performance, GSAT 2004**

<i>2004 GSAT</i>	<b>New Horizon Program Schools (50 with 2003 SIP)</b>	<b>Matched Non-New Horizon Program Schools</b>	<b>Matched pair t-test</b>
Mathematics	29.5	29.4	n.s.
Language Arts	32.6	32.9	n.s.
Comm. Task I	3.2	2.8	2.09, $p < .05$
Comm. Task II	2.9	2.8	n.s.

*Other Factors Affecting Achievement*

Isolating the effects of various inputs to the NHP program is difficult for two reasons. First, other programs may have provided similar inputs to other, poor-performing non-NHP schools, thus mitigating the unique effects of the NHP program; there is no systematic record of these inputs for non-NHP schools, however, to enable this hypothesis to be tested. Second, implementation of NHP was not systematically monitored, so even at the NHP school level basic information is not available on all schools.

We nevertheless attempted to estimate the achievement effects of a small set of characteristics of the schools, the teachers and the students for which data were available across all 791 government primary schools in Jamaica. In these analyses, we focus only on school mean achievement.<sup>3</sup>

We estimate school mean achievement separately for GSAT language arts and mathematics scores, as a function of school characteristics, teacher characteristics, and student achievement. In addition, we include an indicator variable for participation in the NHP program, to test for program effects on the full population of schools. Results are presented in Table 6.

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<sup>3</sup> We recommend that subsequent analyses be carried out at two-levels: students within schools.

**Table 6. School, Teacher and Student Effects on School Mean GSAT scores in 2004, OLS Regressions**

Dependent variable:	GSAT Language 2004			GSAT Math 2004		
	B	Std. Error	t	B	Std. Error	t
School characteristics 1999						
Total enrollment grades 1 to 6	0.003	0.002	1.164	0.002	0.002	1.026
Count of teachers grades 1 to 6	0.045	0.089	0.512	0.074	0.086	0.865
School Shift (1 = yes)	-3.377	0.899	-3.755***	-4.128	0.868	-4.759***
Rural location (1= rural)	-0.763	0.593	-1.286	-0.962	0.572	-1.681*
Remote Rural location (1= remote rural)	0.197	0.736	0.268	-0.042	0.710	-0.059
Breakfast (1 = yes)	0.110	0.606	0.181	0.708	0.585	1.211
Active PTA (1 = yes)	4.091	0.985	4.154***	3.730	0.950	3.928***
School has School Board or Scope (1 = yes)	-0.337	0.663	-0.508	-0.690	0.640	-1.079
NHP school (1= yes)	-1.056	0.723	-1.460	-0.643	0.698	-0.922
Teacher characteristics 1999						
Percent teachers with CXC (highest level of teacher training) only	-3.299	2.324	-1.419	-3.587	2.242	-1.600
Percent teachers with Certificate only	-3.265	2.045	-1.597	-4.077	1.972	-2.067**
Percent master teachers in school	0.164	0.321	0.511	0.046	0.309	0.149
Mean years experience at grades 1 to 6	0.043	0.012	3.686***	0.036	0.011	3.241***
Mean years experience in school (grade 1 to 6)	0.007	0.038	0.174	0.039	0.037	1.073
Student achievement 1999						
GSAT Mathematics 1999	0.058	0.070	0.823	0.241	0.067	3.564***
GSAT Lang 1999	0.276	0.061	4.539***	0.135	0.059	2.295**
(Constant)	20.673	2.882	7.174***	17.299	2.779	6.224***
R-square	0.244			0.273		
Adj. r-square	0.228			0.258		
Cases	791			791		

\*\*\* p < .01, \*\* p < .05, \*p < .10

Factors associated with higher scores on 2004 GSAT Mathematics test suggest the importance of teachers and community, as well as historical trends in achievement. The school's prior achievement in mathematics and language arts as indicated by 1999 GSAT scores was positively associated with its subsequent performance in mathematics in 2004. The fact that language arts achievement is a strong predictor of mathematics achievement underscores the importance of disentangling the verbal and computational components of the GSAT mathematics test.

The single school characteristic that was positively associated with higher performance in mathematics was the presence of an active PTA, which boosted scores by nearly 4 points. Two school characteristics were associated with lower performance. Schools on multiple shift programs scored more than 4 points lower on GSAT mathematics in 2004 than schools without shifts, while rural (but not remote rural) schools scored about one point lower. Factors unrelated to 2004 GSAT performance were presence of a school board or SCOPE program, presence of a breakfast program, school size and remote rural location.

Teacher characteristics associated with higher performance included both teacher experience and teacher qualifications. Schools with more experienced teachers and those with a higher share of teachers with qualifications higher than either a CXC (highest level of teacher training) alone or a teacher certificate alone achieved higher GSAT mathematics scores in 2004, holding constant GSAT mathematics scores in 1999.

A similar pattern was found for language arts achievement, with three exceptions. The 1999 mean school GSAT mathematics scores was not predictive of the 2004 mean school language arts score; the effect of teacher qualifications, while in the same direction as for GSAT mathematics, was not statistically significant; and the effect of rural location, while also in the same direction, was not statistically significant.

One implication of this finding is that policies that support local PTAs and that bring better qualified teachers to poorly performing schools could boost achievement in such schools.<sup>4</sup>

### ***Conclusion on Test Results***

Compared with schools not in the NHP program, schools participating in the NHP program showed higher performance at the lower ends of two tests of achievement measured at Grade 6: writing (GSAT Communications Task I) and mathematics. Average Communications Task I scores were higher in NHP schools than in matched non-NHP schools in 2004, and in 2004 the share of NHP schools with average GSAT mathematics scores of 30 or more points (out of a possible 80) was greater than the share of non-NHP schools with average GSAT mathematics scores of 30 or more points. In both cases, the range of improvement occurred below the levels designated “near mastery.” Factors associated with higher literacy and numeracy in 2004 included the presence of a good quality School Improvement Plan (School Development Plan) in 2003, an active PTA, and higher performance in 1999. Schools with more qualified and more experienced teachers in grades 1-6 scored higher than those with less experienced and less qualified teachers. Schools on multiple shifts achieved less than those on single shift, while rural schools also scored less well than urban schools. Factors unrelated to 2004 GSAT performance were presence of a school board or SCOPE program, presence of a breakfast program, school size and remote rural location.

### **Section 3. Student Performance Measures**

Three evaluation questions dealing with performance measures were posed by USAID:

1. Is the use of mastery/near-mastery/non-mastery categories on the GSAT masking real gains in student achievement in the schools?
2. Is the GSAT the best measure of student performance for the project schools, considering that it is based on the content delivery system of the old curriculum?

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<sup>4</sup> We recognize that deriving policy implications from correlational analyses is dangerous, as issues of causal attribution remain. However, as these findings tend to support important dimensions of the NHP and other program to improve primary education in Jamaica, it is worthwhile mentioning them.

3. How can valid measures of students' computational skills in numeracy be assessed for students who are unable to comprehend the language in which most numeracy items are couched in the GSAT examination?

### ***Background on the GSAT and the NAP***

The Grade Six Achievement Test (GSAT) was designed originally as part of the National Assessment Programme as a low-stakes test to be used primarily for national monitoring and evaluation. The content and skills assessed by the exam reflected a national curriculum from 1980 and the exam was designed for all children in Grade 6 regardless of their age or ability. Its stated intent was to measure "achievement of skills for continuing learning in Grade 7" (Russell, 1996, p. 94). The test was first administered in 1988. Subsequently, while some years the test was administered nationally, in other years only samples of Grade 6 students participated. Some adjustments were made in the test specifications to reflect changes in the national curriculum (primarily changes in the topics for science and social studies), but fundamentally the exam has maintained its original structure.

Until 1999, the GSAT existed alongside the Common Entrance Examination 11+ (CEE). The CEE was used in Jamaica from 1958-1998 to select children for admission into secondary high schools. It tested English, Mathematics and Mental Abilities and was not aligned with the national curriculum. Any child between the ages of 11 and 13 from Grades 4, 5 or 6 could sit the CEE and any child who "passed" the CEE (i.e., was awarded a place in a secondary program) was expected to enter Grade 7 the following year. Many children entered directly from Grade 5. Thus, for example, in 1994, 13,459 places were awarded to high schools but only an estimated 40 percent of these places were awarded to children from Grade 6 (Russell, 1996).

In 1999, the GSAT replaced the CEE as the mechanism for secondary school selection/placement, and students were allowed to sit the exam only once, in Grade 6. Overnight, the GSAT changed from a very low stakes test to a very high profile, high stakes test. At first, the number of students registering for the GSAT (41,932 in 1999) was lower than the number in the age cohort (estimated as 48,000-50,000 in 1999), a consequence of prior practices with the CEE, whereby the higher performing students of 1997 and 1998 would have proceeded directly to Grade 7 from Grade 4 or Grade 5, thus skipping Grade 6. In subsequent years, this "creaming" no longer occurred, and GSAT registrations both increased and stabilized: 46,746 in 2000; 47,889 in 2001; 50,547 in 2002; 49,281 in 2003; and 48,799 in 2004. A possible explanation for the slight decline in registrations in 2004 is the introduction of the Grade 4 Literacy Test in 2001, which may have slowed student progress to Grade 6 in 2004. An inspection of the ages of students taking the GSAT over these years shows that the share of those aged 12-13 increased slightly while the share of those aged 11-12 dropped slightly (table 7).

**Table 7. Ages of students reporting scores from the GSAT, 2000-2004**

<i>Age Group</i>	<b>GSAT Test Year</b>				
	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<11	1%	1%	0%	0%	0%
11<12	53%	53%	49%	51%	51%
12<13	45%	46%	49%	48%	48%
13+	1%	1%	1%	1%	1%

When the GSAT replaced the CEE, an attempt was made to expand the pool of secondary school places and effectively “place” the majority of Grade 6 students. Schools were instructed to include all Grade 6 students not just those who would likely “pass” and thereby keep up the school average. Regulations about grade repetition were debated. Should children be promoted with their age cohort regardless of their skill level (social promotion)? Should they be allowed to repeat Grade 5 to delay taking the GSAT or be allowed to repeat Grade 6 in order to repeat the GSAT? Regulations restricting test registration were strengthened and safeguards put in place to enforce the rule that students could only take the test once.

One challenge encountered by the MOEYC Student Assessment Unit (SAU) once the GSAT became a high stakes test was that there were insufficient items in the difficult or high end of the GSAT scale. Students were scoring 100 percent, making it impossible to distinguish among them. This was not surprising since estimations of item difficulty used in developing the test were based on data from pre-testing of items before the test carried meaning for the students. In 2002 and thereafter, the SAU modified the test specifications and added more difficult items to the test in order to be able to more accurately differentiate amongst high scoring candidates.

### ***Mastery Levels and Measurement of Performance***

The use of GSAT mastery levels for NHP program evaluation is overly ambitious. A common practice in program evaluation is to establish a criterion level of performance and to measure success against this criterion. In the absence of a meaningful comparison group, this method provides a stable means of measuring change. An example illustrates the potential utility of this approach. Consider the hypothetical situation in which prior to intervention 25 percent of the students completing Grade 1 can write their names without help and after the intervention 50 percent of students completing Grade 1 can write their names without help. In very concrete terms this means that there has been a 100 percent improvement in this skill. While it is not possible to attribute causality exclusively to the intervention, the change is objectively measurable.

Similarly it is sometimes possible to identify a specific curriculum objective (e.g., simple 1-digit addition) and measure student performance using a sample of items representative of the domain (e.g.,  $1 + 1$ ,  $2 + 7$ ,  $8 + 3$ ). Once again, the interpretation is fairly transparent: a student who gets less than 50 percent correct has not mastered the skill, a student with 50-75 or 85 percent correct shows partial understanding and a student who gets a high proportion of problems correct (usually in the range of more than 85 percent correct), has mastered the skill or concept. Mastery levels that rely on a score that is the aggregate of performance on several skills or curricular domains are not as easily interpretable. For example, achieving a score in the non-mastery range could mean the student mastered some skills but not others or it could mean the student has partial mastery of some skills and no master of others covered by the test. Generally, it is not possible to link the aggregate score to mastery of a particular skill.

Another issue is the use of “mastery” in the context of “high stakes” testing. What does it mean to get a score of 50 percent correct when the test is high stakes and the precision is most needed at the top? If the test is designed to concentrate on the high end of the scale (difficult items), sensitivity at other parts of the scale (for example, around 50 percent) is not as critical and consequently there may be fewer items and less sensitivity to finer distinctions in the middle and lower ranges of the scale.

In the GSAT, the high profile distinctions are at the top of the scale (that is, above 75 percent correct). Scores at this end of the range are used to identify the children who will be admitted into the prestigious high schools. A small fraction of Grade 6 students achieve at this level; most children’s

performance falls below the 50 percent correct mark (for example, in 2004, 68 percent of the test takers scored below 50 percent correct in GSAT mathematics and 60 percent scored below 50 percent correct in language arts), and the students in NHP schools on average performed substantially less well. Thus, a mastery level that defines 0-50 percent correct as “non-mastery” will lump all of these children together. The likelihood of moving out of this range, particularly if you are a student in a low performing school who started with lower skills than children in middle and high performing schools, is very slim and far too ambitious as the primary indicator of a reform’s success.

### ***The GSAT as a Measure of Student Performance for Project Schools***

As noted above, the GSAT is a curriculum-based test, which was initially developed in the 1980s. It has been continuously revised, in part to reflect changes in the curriculum and in part to reflect its increasing emphasis on selection/placement. Its utility for assessing program impact is limited by (a) the share of test questions that are comparatively more difficult, and therefore not sensitive to changes in more “basic” skills, (b) its inability to assess growth in the early grades, and (c) the weakness of its horizontal equating, rendering changes in scores difficult to interpret.

Given the pace of implementation of the NHP program, effects are most likely to be observed in the early grades, and tests designed to capture changes in beginning literacy and numeracy may be more appropriate as a measure of program impact. For example, the Grade Three Diagnostics Test was used in the formative evaluations of NHP and achievement data were systematically collected for students in project schools. Unfortunately, performance data for this test are not uniformly available for non-NHP schools. Although the MMOEYC requests that all schools submit the data to the Student Assessment Unit, many schools do not follow through. Hence it was not possible to compare third grade performance of students in NHP schools with performance of students in their matched comparison schools or of students nationally. Similarly, it is possible that the Grade Four Literacy Test is designed to measure skills addressed by an intervention targeting lower performing schools. However, this test was first administered mid-way through the NHP implementation and the psychometric properties of the test are not known.

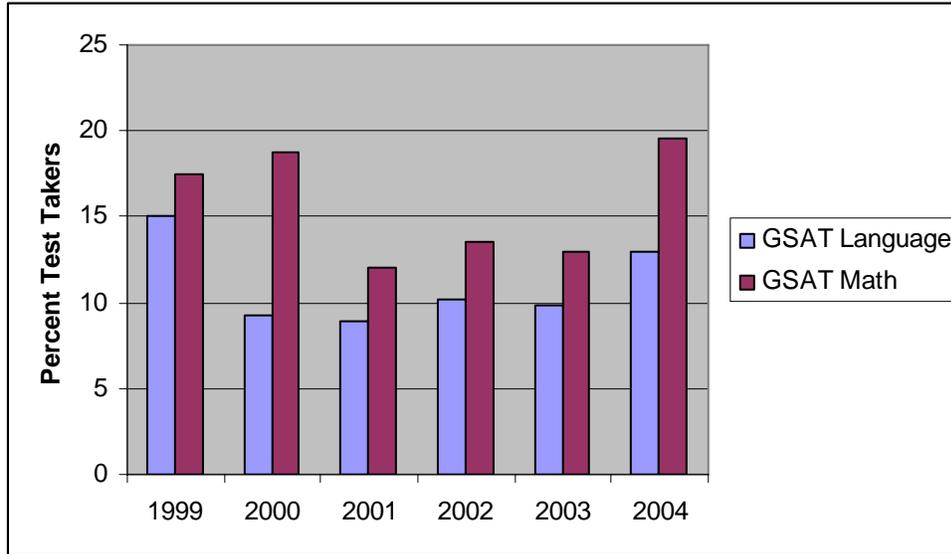
As might be expected, annual variations in the composition of GSAT test takers (e.g., absence of those who had skipped Grade 6, repeaters, etc.) yielded overall differences in average performance on the test from one year to the next. As was discussed earlier, during the implementation of the New Horizons Program, average performance increased initially and then declined. These trends, rather than indicating actual changes in student learning, largely reflected changes in the student population taking the exam.

Annual variations also present challenges for those who wish to interpret annual mean score changes. The MOEYC Student Assessment Unit (SAU) is cognizant of the importance of test equating and, when it does not defeat the tests’ purpose and resources are available, it employs techniques to horizontally equate its high volume tests. The SAU has clearly defined test specifications, pretest items to calibrate item difficulty, and target difficulty levels for items and tests. When it chose to add more difficult items to the test in 2002, it appears that moderately difficult items were replaced with very difficult items. As a consequence, the distribution of easier items was similar across tests. This was an astute decision and one not usually made by less sophisticated test developers. Nonetheless, the SAU relies primarily on classical test theory for their equating and they would benefit from more training and support in item response theory and its applications.

At the same time, we found substantial variations in the share of students reporting scores who scored at or below the “chance level,” or what they would have achieved by simply guessing (Figure

3). In 1999, more than 15 percent of GSAT test takers scored at or below “chance” levels. This share dropped sharply in 2000 for GSAT language arts and in 2001 for GSAT mathematics and remained at a lower level until 2004 when the share increased again. The variation reflects both changes in the test difficulty and changes in the test taker population caused by the phasing out of the CEE.

**Figure 3 Percent of GSAT test takers scoring at or below chance in mathematics and language arts, 1999-2004**



#### ***Literacy Effects on Mathematics Performance***

Literacy, as assessed through the GSAT language arts test, is a powerful predictor of performance on the GSAT mathematics test. Assessment of numeracy, independent of literacy, is possible for non-verbal computation skills. However, such an assessment may not represent the full range of skills taught through the curriculum or intended to be measured. Word problems typically form a large share of mathematics assessments, and it is expected that the GSAT is no different in this respect. This is especially true if the GSAT has been adjusted to reflect the newer curriculum objectives in mathematics that emphasize problem solving and mathematics applications rather than simply mathematics computation. We were not able, however, to directly examine the GSAT and assess the language demands of the items and its use of word problems. Further, although we had subscores for each of the multiple choice subject tests (mathematics, language arts, science and social studies), we did not have information on which items formed the subscales within each subject test. This made it impossible to investigate possible mastery of subskills within a subject area.

Initially, we anticipated receiving from the MOEYC copies of the GSAT item questions and response alternatives so that these documents could be content analyzed to address the question of how literacy affects mathematics performance. Because the GSAT questions were not released to the evaluation team, we were not able to carry out this analysis. The Student Assessment Unit had begun such an analysis and expressed interest in pursuing funding to continue their efforts. However, we did explore the question in two ways. First we examined individual performance on GSAT mathematics as a function of GSAT language arts and prior school GSAT achievement for all GSAT test takers. Second, we explored the question through an analysis of the determinants of 2004 GSAT scores at the school level, as described in Section 2 for NHP, and matched non-NHP schools. In this section we discuss these findings, in lieu of the analysis we originally intended to carry out.

At the individual level across all GSAT test takers, the correlation between GSAT language arts and GSAT mathematics is very high: .84 for 2004. Controlling for school quality, as indicated by school average GSAT scores in 1999, does little to alter this relationship (table 8). For every point on the GSAT language arts test, the student's score on the GSAT mathematics test increases by .84 points. The school average GSAT language arts score in 1999 is, surprisingly, negatively related to individual achievement in 2004. Although the coefficient is significant, it is relatively small, suggesting a regression to the mean at the higher end of the continuum. The school average mathematics score in 1999, however, is positively related to individual achievement in 2004, and the coefficient is similar to the previously reported.

**Table 8. Individual GSAT mathematics score in 2004 as a function of individual GSAT language arts score in 2004 and school average GSAT mathematics and language arts scores in 1999**

Dependent Variable	GSAT Mathematics 2004		
	Coefficient (standard error)	t	Sig.
Individual GSAT language score 2004	.8414 (.0026)	322.78	.000
School average GSAT language score 1999	-.0855 (.0142)	-6.016	.000
School average GSAT math score 1999	.2546 (.0173)	14.57	.000
Constant	-2.6020 (0.2287)	-9.0126	.000
R-square	0.7227		
Adjusted R-square	0.7227		
Cases	43454		

At the school level for NHP schools and matched non-NHP schools, the mean school average 1999 GSAT language arts score is also included as a predictor of the school average GSAT mathematics score in 2004 (see Table 4). The language arts score in 1999 was a strong predictor of mathematics score in 2004, even when the mathematics score in 1999 was statistically controlled. For every point on the 1999 language arts test, the school average mathematics test score improved by .13 points in 2004.<sup>5</sup> The effect was half the size of the effect of 1999 mathematics score and nearly as statistically significant: For every point on the 1999 language arts test, the school average mathematics test score improved by .14 points in 2004 compared with an improvement of .24 for every point on the 1999 mathematics test.

We simulate what the effect would be of boosting literacy to the “near mastery” level on mathematics performance (Table 8). Improving the school average language arts scores of the students in NHP schools in 1999 to “near mastery” would have raised the school average mathematics scores by one full point on the mathematics test in 2004. This would not, however, have

<sup>5</sup> Caution must be taken in interpreting these coefficients, as the student taking the tests come from different cohorts and – for reasons discussed in this section – may not be similar at the two points in time. Moreover, the tests themselves are not fully equated.

been sufficient to raise the mathematics scores to “near mastery” and the effect is not nearly as great as raising the school mean mathematics scores to “near mastery.”

**Table 9. Estimated effect on 2004 GSAT scores of improving 1999 GSAT from NHP school means to “near mastery” levels (simulation)**

<b>Simulation</b>	<b>Actual NHP School Average 2004 GSAT Math</b>	<b>Estimated NHP School Average 2004 GSAT Math</b>
1999 GSAT Math increased to “near mastery” from actual	28	31
1999 GSAT Language arts increased to “near mastery” from actual	33	34

Source: Table 4

### ***Conclusion on Effective Measures of Performance***

We conclude that the GSAT was not an effective measure of the impact of the NHP on student learning in mathematics and language arts for two main reasons: (a) imperfect equating and (b) insensitivity to modest achievement gains by lower performing students.

With respect to imperfect equating, annual variations in the composition of GSAT test takers (e.g., absence of those who had skipped Grade 6, repeaters, etc.) and changes in the difficulty of test items and specifications yielded overall differences in average performance on the test from one year to the next. As was discussed earlier, during the implementation of the New Horizons Program average performance increased initially and then declined. These trends, rather than indicating actual changes in student learning, largely reflected changes in the student population taking the exam as well as variations in the item difficulties represented in the test. Although the Student Assessment Unit of the MOEYC works to equate its high volume tests and render comparable results from one year to the next, sometimes the need to adapt the test takes precedence.

With respect to insensitivity to modest achievement gains by low performing students, the test is sensitive at the higher performance level. In order to serve its high stakes purpose the test must cover a broad range of skills and largely focus on the skills needed for secondary school success. The GSAT was never intended to cover beginning literacy and numeracy skills. Consequently, it is not surprising that many students are scoring at a level suggesting that they guessed at the majority of the items and that the test is not adequately sensitive to changes in achievement of lower performing students.

### **Section 4. Data Considerations**

Two questions dealing with data were posed by USAID:

1. How effective were the indicators used for tracking the results of the NHP and what suggestions could be made for the future?
2. How effective are the methodologies used to collect data?

### ***Indicators for Tracking Results***

The results of the NHP were intended to be improved literacy and numeracy in schools participating in the program, which provided schools a menu of ten interventions from which they could choose to help achieve results. Data on how schools picked from the list of ten potential interventions and how

effective the school was in the implementation of these interventions were not available and may not have been collected. The only Jamaica-wide gauge available to measure mathematics and language arts performance was the GSAT, whose limitations for measuring growth in the lower performing schools have been discussed in Section 3.

In addition, while anonymous GSAT data were available at the individual student level, other useful demographic information (other than birthdate) was not available.<sup>6</sup> Examples of such data for individual students include data on gender, family socio-economic status, past academic performance, mobility among various schools, school attendance, grade repetition, and special needs status. High quality, individual student records can be extremely valuable in controlling for exogenous factors affecting student performance and in explaining the effectiveness of educational programs. More importantly, availability of past performance data for individual students allows for measurement of individual student growth in achievement over time, which is essential for assessing program impact.

Data that permit statistical controls to adjust for exogenous variables and endogeneity greatly increase the rigor of the analytic methods that can be used to assess program effects. The implementation of the Student Information System piloted by the NHP schools and currently being implemented in some additional Jamaica schools could help enable future evaluations with access to more robust student-level data.

### ***Data Collection Methodologies***

The team encountered four important challenges in working with data to conduct this evaluation: (a) lack of data integration, (b) lack of codebooks adequately describing the School Census in various years, (c) complexities of the teacher files, and (d) inconsistent documentation regarding the NHP schools and the qualified pool of schools from which the program participants were selected. These have implications for future data collection methodologies.

One challenge was that the data were not housed in one location nor were the various data sets integrated. Some data were located with the MOEYC, while other data were housed with a Jamaican data processing organization. The lack of data integration required the evaluation team to conduct considerable work identifying common linking variables and matching different types of data files to conduct the detailed statistical evaluation required.

This integration and matching effort was complicated because the Ministry was unable to provide a detailed codebook for any of the School Census files, although copies of the survey document were provided for the 2003 School Census. We found that the School Census Survey differed each year, 1999 to 2003, in the actual number of variables, type of variable, and the location of these variables in the data record. We were advised that the data file generally followed the survey but that some of the data elements were different. We were provided with screen shots of some of these differences. Based upon the 2003 School Census Survey instrument, the screen shots, and some investigative work, such as running frequencies and cross-tabulations on variables whose definitions were uncertain, we were able to clarify most of the over 170 school level variables included in the annual School Census file. One notable exception was the use of computers in the schools, including teacher training for computer use, which we were unable to identify in any of the School Census files (although the questions appeared on the survey). Increased use of computers for administrative and

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<sup>6</sup> Individual student identity was ensured by removing all individual identifying information for all student level records

educational purposes is one of the key interventions of the NHP program and, because Jamaica-wide information was not available on this, we were unable to include this variable in our analysis. The Ministry would benefit from the development of a code book for each file they maintain. Such a code book should explain what each grouping of data represents and the metadata about that data.

Teacher files were complex and some of the variables describing teachers were inconsistent across years. The Annual School Census survey gathers information about teachers and staff in the school. This file contains approximately 50 variables and is different in that it is a file at the individual teacher level. Thus, teachers are nested within schools, which adds to the complexity of managing the data files. In addition, since definitions of teacher variables varied over years, the absence of a codebook hampered our work.

We found inconsistencies in the identification of NHP program schools. Two documents described the NHP schools and the original 194 schools from which these 72 NHP schools would be selected. We found small inconsistencies in what should have been straight forward matches and generation of matching code. In some cases, schools identified as participating in the NHP were not actual participants, and in other cases, school IDs were inconsistently used. In measuring program effects with small samples, it is critical to be as precise as possible. The discrepancies were found may reflect a need for better documentation or more available documentation on actual program implementation or the documentation of modifications to original plans.

### ***Conclusion on the Effectiveness of Data Collection Methodologies***

Effectiveness of data collection methodologies could be improved by enhanced documentation of codebooks, full documentation of data integration, and a system-wide EMIS similar to the Jamaica School Administrative System that was implemented in the NHP schools. We understand that the MOEYC is aware of these issues and is moving forward with wider application of the EMIS, beginning with 200 additional schools.

## **Section 5. General Conclusion and Recommendations**

With the support of USAID, the New Horizons for Primary Schools program was initiated in 1998 and rolled out in 1999 to improve the quality of teaching in order to raise literacy and numeracy at the primary level, improve school attendance and strengthen school management. The first cohort of students who attended NHP schools for all or most of Grades 1-6 completed Grade 6 in 2004. This report examines the effect of the NHP on the learning achievement of those students and addresses eight questions posed by USAID Jamaica.

1. Have NHP schools made achievement gains over the years under review?
2. What factors in the project schools may have affected gains or lack of gains?
3. Is the use of mastery/near-mastery/non-mastery categories on the GSAT masking real gains in student achievement in schools?
4. Is the GSAT the best measure of student performance for the project schools, considering that it is based on the content delivery system of the old curriculum?
5. How can valid measures of students' computational skills in numeracy be assessed for students who are unable to comprehend the language in which most numeracy items are couched in the GSAT examination?
6. How has "social promotion" to Grade 6 affected average performance results among students?
7. How effective were the indicators used for tracking the results of the NHP and what suggestions could be made for the future?
8. How effective are the methodologies used to collect data?

### ***Gains in Achievement***

Compared with schools not in the NHP program, schools in NHP showed higher performance at the lower ends of two tests of achievement measured at Grade 6: writing (GSAT Communications Task I) and mathematics. Average Communications Task I scores were higher in NHP schools than in matched non-NHP schools in 2004, and in 2004 the share of NHP schools with average GSAT mathematics scores of 30 or more points (out of a possible 80) was greater than the share of non-NHP schools with average GSAT mathematics scores of 30 or more points. In both cases, the range of improvement occurred below the levels designated “near mastery.”

### ***Factors Affecting Gains in Achievement***

Factors associated with higher literacy and numeracy in 2004 included the presence of a good quality School Improvement Plan (School Development Plan) in 2003, an active PTA, and higher performance in 1999. Students in schools with more qualified and more experienced teachers in Grades 1-6 scored higher than those with less experienced and less qualified teachers. Students in schools on multiple shifts achieved less than those on single shift, while students in rural schools also scored less well than those in urban schools. Factors unrelated to 2004 GSAT performance were presence of a school board or SCOPE program, presence of a breakfast program, school size and remote rural location.

### ***Use of Mastery/Near-mastery/Non-mastery Categories***

The use of mastery/near-mastery/non-mastery categories on the GSAT hides most observable gains. Nearly two-thirds of students taking the GSAT score below the near mastery cut-off score (50 percent correct) on the key achievement tests used to evaluate NHP: mathematics and language arts. Since the NHP schools were selected from among those in which the average school achievement was below the national average, the average student performance in these schools is well below near-mastery. A test that included more comparatively easy items would be more sensitive to change than a harder test, particularly when results are aggregated into such broad “mastery” categories. We found that the reliability and discrimination of hypothetical subscales based on “easier” items was acceptable. However, analyses of reliability, discrimination and differential item functioning based on actual GSAT subscales, which would provide more information regarding sensitivity of the GSAT at the lower levels, were constrained by lack of access to actual test questions and response options and to information on subscale composition.

### ***The GSAT Curriculum***

The GSAT was designed originally to reflect the 1980 national curriculum and to assess skills thought to be necessary for secondary school success. Unlike its predecessor the CEE, it is curriculum based and covers the major elements of the upper primary curriculum: Mathematics, Language Arts, Science, Social Studies and Communication (writing). With curriculum reform in the last decade, the test has been adjusted to reflect changes in emphasis. Primarily the differences are in the topics covered in Science and Social Studies. Fundamentally the basic structure of the test remains unchanged.

### ***Assessing Numeracy net of Literacy***

Using the GSAT to assess student gains in mathematics, independent of students’ language skills, is possible, in two ways. First, scores on mathematics could be statistically controlled for language arts performance, in multivariate analyses. We adopted this approach at both the individual student and school level, and found strong correlations between achievement on GSAT language arts and GSAT mathematics at both levels. This suggests that the GSAT mathematics test has a strong verbal component, but may also indicate underlying skills common to performance on both tests.

Second, GSAT mathematics items could be analyzed for verbal content, and those items lacking high verbal content could be selected for analysis. We were unable to do this for the 2004 GSAT, as the MOEYC would not grant us permission to review the item questions (stems and response options). Apparently, such an analysis had been initiated in 2003; however, the investigation was not completed because of other priorities within the Student Assessment Unit and limited resources to conduct the workshops needed for item classification. This analysis could be undertaken by the Student Assessment Unit of the MOEYC, serving a dual purpose: investigating the role of language in mathematics performance and building capacity within the MOEYC to conduct and utilize data from this kind of study.

### ***Social Promotion***

The data provide little evidence of “social promotion” in primary schools in Jamaica. If “social promotion” had been in place in the early 2000s, we would have expected to see a slight decline in the share of older students in Grade 6, as they would not have been held back in earlier grades. Instead, the share of students reaching Grade 6 at a slightly older age increased from 2000 to 2004. There are two possible explanations. First, introduction of the Grade 4 literacy test in 2000 may have resulted in students repeating that grade.

Second, the elimination of the CEE 11+ in 1999 also eliminated the possibility of students advancing to Grade 7 prior to completing Grade 6. In 2000 and 2001, years in which the GSAT test takers were slightly older, some students who were successful on the CEE 11+ in 1998 or 1999 had already advanced to Grade 7, and were therefore not included in the GSAT populations.

### ***NHP Indicators***

The indicators used in tracking the NHP were ineffective in two ways. First, the impact of the program should have been monitored in earlier grades and through tests that were not “high stakes.” Collection of Grade 3 Diagnostic test results from all schools in Jamaica would have enabled a more robust analysis of the effects of the program. Second, indicators of NHP implementation (and the implementation of similar interventions in non-NHP schools) were not collected.

### ***Data Methodologies***

While the data systems that were developed for NHP have many positive features, rigorous evaluations would require comparable information to be available across a set of comparison schools, if not for all Jamaica. In addition, use of the data would be facilitated by the preparation and dissemination of comprehensive codebooks for all data sets, on an annual basis. Finally, the MOEYC should be encouraged to establish unique codes for all schools, and to discontinue the practice of “recycling” school codes, which leads to confusion in the use of school level data.

### ***Recommendations***

On the basis of the analyses in this report, we recommend the following for improving future evaluation designs and processes:

- Comparison schools are essential and should be identified at the outset and monitored simultaneously with NHP program schools.
- Data collection should include indicators that assess all main program objectives, including: achievement, attendance and school management.
- Indicators should be collected for all project schools and matched comparison schools.
- If subsets or samples of project schools are included for special evaluations, the subsets or samples should remain the same over time, to monitor trends.
- Data need to be reliably collected, aggregated and reported centrally.

- Multivariate and hierarchical linear modeling techniques should be used for analysis purposes.
- We also recommend the following for evaluation indicators.
- Monitoring of NHP implementation at the school level is essential.
- Third grade achievement test data should be collected nationally (or, minimally for all NHP and matched comparison schools) and reported centrally to allow for earlier assessment of impact.
- Performance scores should be adjusted to correct for annual imprecision in test equating.
- Comparisons should use actual scores rather than collapsing scores to “mastery levels.”

***Recommendations for next steps***

In order to gain a better understanding of the impact of NHP on student achievement and to the assess adequacy of alternative measures for monitoring future reform efforts, we recommend a series of further data collection and analysis activities:

- Collect from all NHP and a matched set of non-NHP schools the results from the 2004 (and possibly 2005) Grade 3 Diagnostic and Grade 4 Literacy tests.
- Evaluate the adequacy of the Grade 3 Diagnostic and Grade 4 Literacy tests as indicators for monitoring and evaluating program impact.<sup>7</sup>
- Survey all NHP and a matched set of non-NHP schools to identify program inputs that may boost literacy and numeracy.
- Analyze the resulting data using multivariate, including HLM, statistical techniques.

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<sup>7</sup> This assessment would include looking specifically at (a) procedures for test administration, (b) test development and item security, (c) targeted skills, (d) data management, (e) equating and (f) psychometric analyses of recent administrations based on convenience samples. It would also review MOEYC plans for continuing use of these two tests.

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### Annex A: Propensity Score Matching

Previous evaluations of the New Horizons for Primary Schools program (NHP) have collected data on NHP schools only or have used small samples of NHP and comparison schools. In this study we use propensity-score matching techniques to create a set of schools that match, on a one-to-one basis, the schools in the NHP program. We then compare the NHP schools with these matched non-NHP schools to test for effects.

#### Propensity score matching

Propensity score matching is utilized to compensate for the absence of a pure experimental design, whereby treatment and control groups are established *a priori*. It helps correct for any “self-selection” that may have occurred in the identification of the NHP schools, as well as creates a comparable non-treatment group against which the NHP may reasonably be compared.

In order to establish predicted probabilities for schools to participate in the NHP program, we employed a logit regression with a bivariate variable indicating the school’s participation in the program as the dependent variable. We examined three sets of variables related to participation in the NHP program: (a) characteristics of the school in 1999, (b) characteristics of the teachers in the school in 1999, and (c) achievement of the students in the school in 1999. We used 1999 school year data, instead of actual pre-program data, as they were the first available for all government schools with primary (grade 1-6) sections. The most important predictor of being in the program was having been designated in the list of 194 schools that were “qualified” for the program as per *Final Report: Project Schools Selection, New Horizons Activity* (Project Implementation Unit, December 1998), followed by the size of the school, an indicator of the poverty level of the community (breakfast program) and presence of a master teacher. The results of the logit regression are presented in table A.1

**Table A1. Logit regression predicting participation in NHP program (N = 791)\***

	<b>B</b>	<b>S.E.</b>	<b>Significance</b>
Remote_Rural_Location	0.137	0.552	0.804
Rural_Location	-0.004	0.427	0.993
Boarandscope	-0.788	0.539	0.144
PTAexist	0.430	1.067	0.687
breakfastYES	0.780	0.477	0.102
Shift	0.694	0.695	0.318
teachergrade	0.166	0.074	0.026
TotalEnrollment1to6	-0.003	0.002	0.086
MathScr_mean1999	-0.064	0.068	0.348
Orginal195(1)	-6.113	1.066	0.000
LangScr_mean1999	-0.008	0.062	0.897
Tsk1_mean1999	0.306	0.651	0.639
Tsk2_mean1999	0.044	0.797	0.956
YrsOfServicegrade1to6	0.002	0.041	0.962
YrsInSchoolgrade1to6	0.002	0.025	0.923
CXC (highest level of teacher training) Percent	2.960	2.119	0.162
Certificate_percent	1.343	1.909	0.482
Master teacher percent	0.077	0.207	0.710
Constant	-1.570	2.761	0.570

\*Through a series of regressions these indicators proved to be the most predictive

1. Remote\_Rural\_Location: Schools were categorized into three geographic locations Urban, Rural and Remote Rural. Remote Rural and Rural were identified as predictive
2. Rural\_Location - see above
3. Boarandscope : a combination variable for a school that has a school board and or a SCOPE program present
4. PTAexist: variable for the existence of a functioning PTA at the school.
5. breakfastYES: Variable for a functioning breakfast program
6. Shift: Variable for schools on a shift program
7. teachergrade: Variable for teachers at each grade level
8. TotalEnrollment1to6: variable for total enrollment in grade 1 to 6. This was to try to control for schools that had grades that were different from grade 1-6, such as schools with grades 1-8
9. MathScr\_mean1999: variable for the Mean Grade Six Achievement Test (GSAT) in 1999
10. Original195(1) : variable for the pool of schools that the 72 NHP schools were supposed to be selected from
11. LangScr\_mean1999: variable for mean GSAT language score by school
12. Tsk1\_mean1999: variable for the mean GSAT task 1 ( a performance based language part of the GSAT)
13. Tsk2\_mean1999: variable for the mean GSAT task 2 ( a performance based language part of the GSAT)
14. YrsOfServicegrade1to6: variable for years of teaching experience of teachers in grade 1-6.
15. YrsInSchoolgrade1to6 : variable for years of teaching experience of teachers in grade 1-6 in this school.
16. CXC\_Percent: variable for the percent of teachers who's highest degree was a high school degree
17. Certificate\_percent:: variable for teachers who had a teaching certificate.
18. Master\_teacher\_percent: variable for schools that had at least one teacher that was classified as a master teacher
19. Constant

### **Propensities**

In order to try to control for differences we used propensity score matching (PSM) to identify 72 "comparison schools" that were similar to the 72 NHP schools being studied at the program start year of 1999. Supposedly, the NHP schools would then be the treatment group and the PSM schools could act as a comparison group. Such efforts are not perfect. Table A2 shows how close the matches were: very close in some cases and not so close in others. This is an effort to be transparent and accurate. We only have 70 schools here as two schools, which came into the program a little later and did not have key data from the 1999 GSAT assessment, did not generate a match using PSM.

The propensities to participate in the programs predicted by the first stage logit regression were then used to match non-participating schools to the participating schools. We were able to match 70 of the 72 NHP schools (97 percent) to a non-participating school using "nearest neighbor" matching. The difference in propensity score was overall very small, with two-third of the matches the same up to two decimal points or better. The average difference across all pairs was 0.08 (Table A2).

**Table A2. Propensity Scores, 70 pairs of schools, Jamaica 2004**

Matched Pair	Non-NHP	NHP	Delta		Matched Pair	Non-NHP	NHP	Delta
1	0.5042513	0.5119474	0.0076961		36	0.2611024	0.2613415	0.000239
2	0.4172761	0.570651	0.153375		37	0.2678804	0.2698231	0.0019427
3	0.3520363	0.3514573	0.0005791		38	0.5679271	0.524	0.0439271
4	0.6025884	0.5326875	0.0699009		39	0.2720227	0.2711854	0.0008373
5	0.241238	0.2410233	0.0002147		40	0.2561346	0.25502	0.0011146
6	0.6510356	0.5416208	0.1094148		41	0.122819	0.1150471	0.0077719
7	0.6586419	0.5699107	0.0887312		42	0.3647079	0.8731876	0.5084797
8	0.4967678	0.4928689	0.0038989		43	0.2909035	0.291495	0.0005915
9	0.462168	0.4529585	0.0092095		44	0.340772	0.3409059	0.0001339
10	0.3323626	0.3315809	0.0007817		45	0.3785678	0.7521022	0.3735345
11	0.349836	0.3476235	0.0022125		46	0.3685919	0.8467132	0.4781213
12	0.3085159	0.3057116	0.0028042		47	0.3715102	0.7930032	0.421493
13	0.3566964	0.3569009	0.0002045		48	0.2732814	0.2771164	0.0038351
14	0.4503066	0.448539	0.0017677		49	0.3466962	0.344105	0.0025912
15	0.6066679	0.5348319	0.071836		50	0.2223232	0.223047	0.0007238
16	0.3210153	0.3168356	0.0041797		51	0.0029482	0.0029779	0.0000297
17	0.3215854	0.3187062	0.0028792		52	0.4369853	0.5381885	0.1012032
18	0.503142	0.5214987	0.0183567		53	0.4203101	0.4217206	0.0014105
19	0.0961448	0.0959445	0.0002003		54	0.3940174	0.6963069	0.3022895
20	0.5132916	0.5115588	0.0017327		55	0.379759	0.7477385	0.3679795
21	0.4708211	0.4802563	0.0094352		56	0.3898405	0.707387	0.3175465
22	0.4010899	0.6080119	0.2069221		57	0.2299804	0.229548	0.0004324
23	0.2735019	0.2767505	0.0032487		58	0.4650572	0.5284258	0.0633686
24	0.3281903	0.3274532	0.0007371		59	0.3771087	0.3771166	7.82E-06
25	0.3980607	0.6616915	0.2636308		60	0.3353627	0.3342119	0.0011508
26	0.2927829	0.2932756	0.0004927		61	0.1355779	0.1312219	0.0043561
27	0.4105894	0.4061338	0.0044556		62	0.3811791	0.3846298	0.0034507
28	0.4300269	0.5389318	0.108905		63	0.3000524	0.2986467	0.0014056
29	0.3639371	0.8834285	0.5194915		64	0.1548092	0.1548988	8.955E-05
30	0.4000816	0.6498142	0.2497326		65	0.3132456	0.3072834	0.0059622
31	0.5007799	0.4966614	0.0041186		66	0.4005574	0.62211	0.2215526
32	0.4626283	0.5330533	0.070425		67	0.4448428	0.4460456	0.0012028
33	0.4129256	0.4145678	0.0016423		68	0.4050324	0.4045277	0.0005047
34	0.1476972	0.149547	0.0018499		69	0.416801	0.5961867	0.1793857
35	0.3856446	0.3845955	0.0010491		70	0.9487294	0.6845186	0.2642108

**New Horizon schools compared with matched non-New Horizon schools**

The two groups of schools – NHP schools and matched non-NHP schools – were very similar in 1999, in most observed respects. However, on average NHP schools are 20 percent larger than matched non-NHP schools and are twice as likely to be on a multiple shift; 10 percent more NHP schools are urban as compared with matched non-NHP schools. Five percent more NHP schools have breakfast programs. This table shows the gross agreement between the NHP schools and the PSM comparison schools to try to be transparent and accurate. Most of the agreements were quite close.

However, we were only able to run this information against 70 schools because of the missing 1999 GSAT scores for two schools. In our follow on study, we estimated a score for these schools using scores from later GSAT assessments.

**Table A3. NHP schools compared with matched non-NHP schools, various characteristics.**

	NHP (N= 70)	Non-NHP (N = 70)
<b>School Characteristics 1999</b>		
Size: Enrollment in Grades 1-6	387	321
Size: Number of teachers in Grades 1-6	13.00	10.57
School Shift (percent)	13	7
Rural location (percent)	43	51
Remote rural location (percent)	20	21
Breakfast Program (percent)	19	14
Active PTA (percent )	97	94
Board and or Scope (percent)	87	91
On list of initially qualified schools (percent)	99	99
<b>Teacher Characteristics 1999</b>		
Qualifications: CXC highest (percent)	28	27
Qualifications: Certificate highest (percent)	67	68
Qualifications: Master teacher in school (percent)	39	39
Experience: Mean years of service at grade 1 to 6	15.13	15.27
Experience: Mean years of service at grade 1 to 6 in school	10.45	10.73
Experience: Percent of teachers in school with two or less years experience	22	25
Master Teacher in school (percent)	87	87
<b>Student Achievement (GSAT school means) 1999</b>		
Mathematics 1999	28.36	28.20
Science 1999	22.95	22.71
Social Studies 1999	33.99	33.57
Language Arts 1999	33.04	32.52
Communications Task 1 1999	2.37	2.34
Communications Task 2 1999	1.34	1.31
<b>Student Achievement (GSAT school means) 2004</b>		
Mathematics 2004	29.33	29.19
Science 2004	23.83	23.53
Social Studies 2004	34.51	34.28
Language Arts 2004	32.60	32.94
Communications Task 1 2004	2.87	2.74
Communications Task 2 2004	3.18	2.79

**Annex B: Matched-pair t-tests**

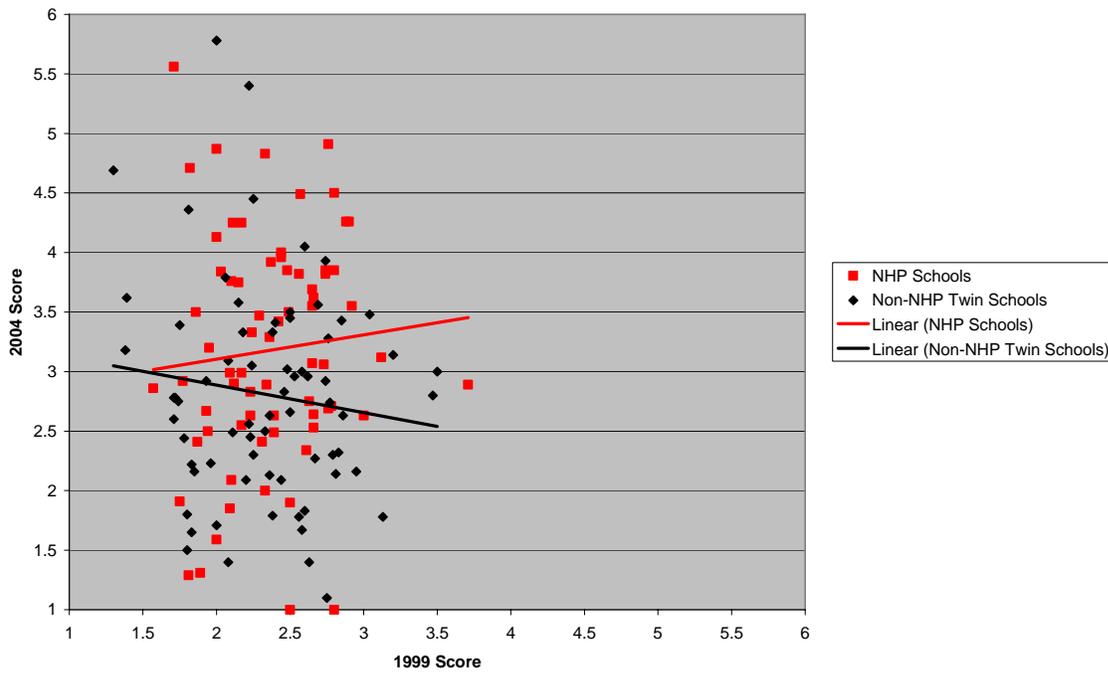
	Paired Differences					t	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
<b>1999</b>							
Mathematics	0.72948	5.93770	0.70969	-0.68632	2.14527	1.028	0.308
Science	0.26177	4.50051	0.53791	-0.81134	1.33487	0.487	0.628
Social Studies	0.58154	7.12427	0.85151	-1.11718	2.28027	0.683	0.497
Language arts	0.24470	6.43905	0.76961	-1.29063	1.78004	0.318	0.751
Communications Task I	0.02916	0.55211	0.06599	-0.10249	0.16080	0.442	0.660
Communications Task II	-0.00061	0.45083	0.05388	-0.10810	0.10689	-0.011	0.991
<b>2000</b>							
Mathematics	-0.55459	8.59018	1.02672	-2.60285	1.49366	-0.540	0.591
Science	-0.18564	6.84579	0.81823	-1.81796	1.44668	-0.227	0.821
Social Studies	-0.37767	9.97244	1.19194	-2.75551	2.00018	-0.317	0.752
Language Arts	-0.56014	8.63086	1.03158	-2.61810	1.49781	-0.543	0.589
Communications Task I	-0.07413	1.56290	0.18680	-0.44679	0.29853	-0.397	0.693
Communications Task II	-0.02159	0.67880	0.08113	-0.18345	0.14026	-0.266	0.791
<b>2001</b>							
Mathematics	0.94832	7.57391	0.90526	-0.857	2.75425	1.048	0.298

				62			
Science	0.91268	5.98222	0.71501	0.513 73	2.33909	1.27 6	0.20 6
Social Studies	0.64815	9.34531	1.11698	1.580 16	2.87646	0.58 0	0.56 4
Language Arts	1.87063	7.96543	0.95205	0.028 66	3.76992	1.96 5	0.05 3
Communications Task I	0.02722	0.91213	0.10902	0.190 27	0.24471	0.25 0	0.80 4
Communications Task II	0.07163	0.70583	0.08436	0.096 67	0.23993	0.84 9	0.39 9
<b>2002</b>							
Mathematics	0.71774	8.82749	1.05509	1.387 11	2.82258	0.68 0	0.49 9
Science	0.83691	5.66040	0.67655	0.512 77	2.18659	1.23 7	0.22 0
Social Studies	-0.23295	8.48650	1.01433	2.256 49	1.79058	0.23 0	0.81 9
Language Arts	0.60640	7.49033	0.89527	1.179 61	2.39240	0.67 7	0.50 0
Communications Task I	0.12098	1.08440	0.12961	0.137 59	0.37955	0.93 3	0.35 4
Communications Task II	-0.02482	0.67560	0.08075	0.185 91	0.13627	0.30 7	0.75 9
<b>2003</b>							
Mathematics	1.40608	7.77809	0.92966	0.448 54	3.26070	1.51 2	0.13 5
Science	1.06217	5.52374	0.66021	0.254 92	2.37926	1.60 9	0.11 2
Social Studies	0.79051	9.26840	1.10779	1.419 46	3.00048	0.71 4	0.47 8
Language Arts	0.65879	7.62605	0.91149	1.159	2.47716	0.72 3	0.47 2

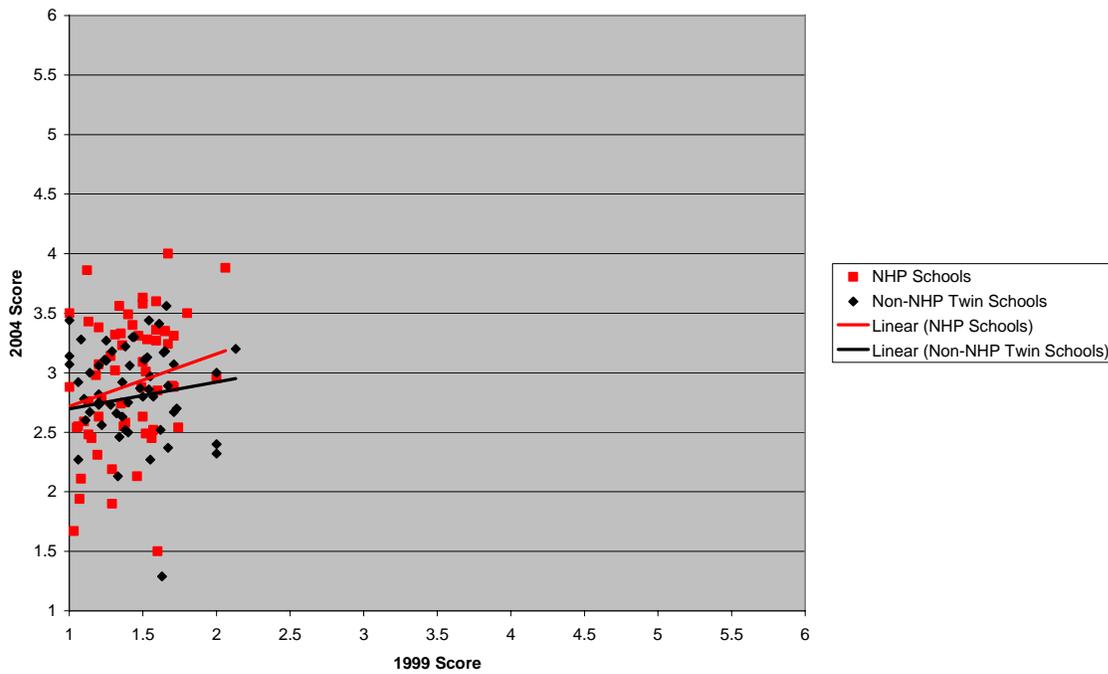
				57			
Communications Task I	-0.01447	0.77600	0.09275	0.19950	0.17056	0.156	0.876
Communications Task II	-0.01729	0.68912	0.08237	0.18160	0.14703	0.210	0.834
<b>2004</b>							
Mathematics	-0.14194	8.21766	0.98220	2.10138	1.81749	0.145	0.886
Science	-0.29843	5.75582	0.68795	1.67086	1.07399	0.434	0.666
Social Studies	-0.22290	8.50060	1.01602	2.24980	1.80400	0.219	0.827
Language Arts	0.33563	8.49021	1.01477	1.68879	2.36005	0.331	0.742
Communications Task I	-0.39151	1.25750	0.15030	0.69135	0.09167	2.605	0.011
Communications Task II	-0.13329	0.88740	0.10606	0.34488	0.07830	1.257	0.213

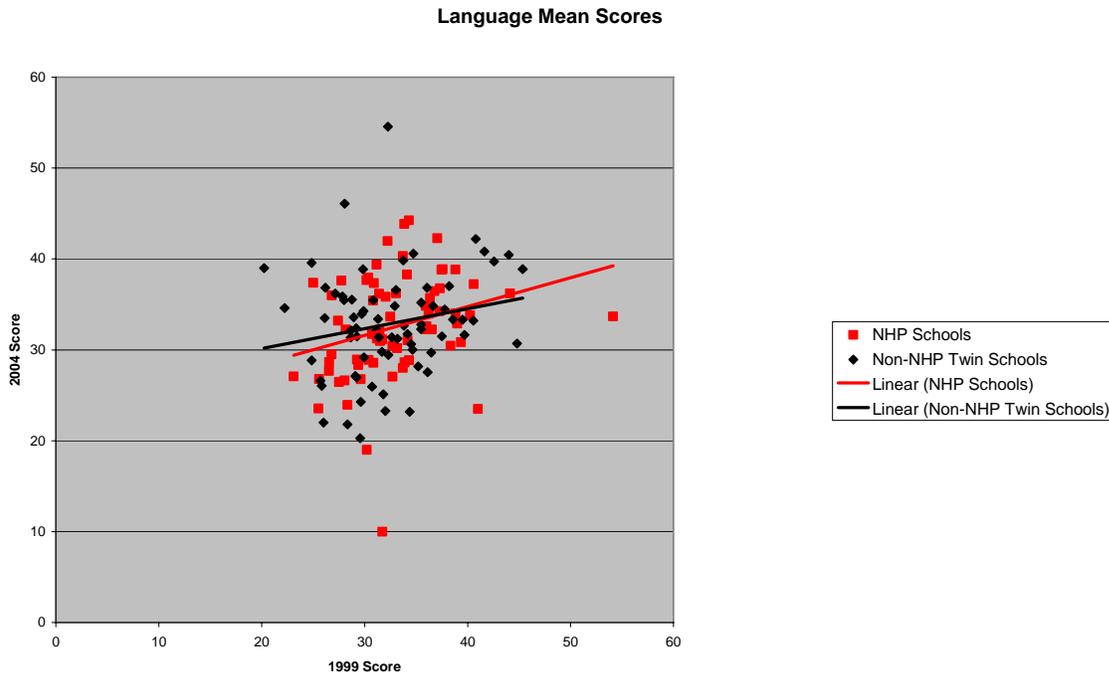
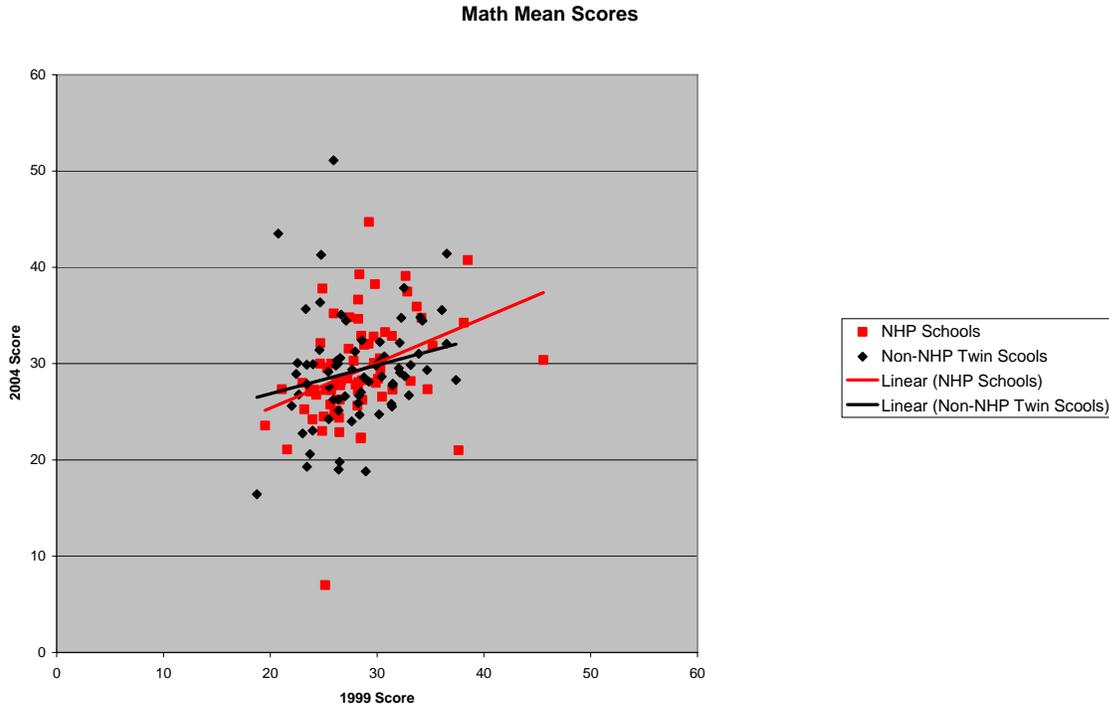
### Annex C: Scatter Plots, NHP and matched non-NHP schools, 1999 and 2004

Task 1 Mean Scores



Task 2 Mean Scores





# BEYOND THE BASICS: BALANCING EDUCATION AND TRAINING SYSTEMS IN DEVELOPING COUNTRIES<sup>1</sup>

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## Abstract

Since 1990, post-primary or post-basic education has received far less support than primary education. Yet, it is becoming increasingly clear that *concomitant* support is needed to both post-basic education and training (PBET) and to the development of a supportive labour market environment for economic growth and poverty reduction. Using evidence primarily from Ghana, this paper examines the reasons for the pattern of low returns to lower levels of education across SSA. To achieve the correct skill-mix for poverty reduction and growth, all levels of education and training need to be supported to bring about the kinds of expected developmental outcomes associated with education. Narrowly funding primary/basic education will not reach the Millennium Development Goals.

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Since 1990 and the World Conference on Education for All, the attention of international development agencies has become increasingly focused on primary education, a focus that has become set in the time-bound targets of the Millennium Development Goals (MDGs). Meanwhile, post-primary or post-basic education has received less support. Research evidence in support of this targeting has associated primary education with a whole host of developmental outcomes. But, several of the outcomes associated with educational expansion have not materialised, especially in Sub-Saharan Africa (SSA),<sup>2</sup> and it is becoming increasingly clear that *concomitant* support to both the post-basic level and to the development of a supportive labour market environment, in particular, are crucial for both economic growth and poverty reduction. Pressure on the post-basic level is exacerbated by the massive increase of primary school leavers in many countries as a result of Education For All (EFA) policies.<sup>3</sup>

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<sup>1</sup> This paper, which draws on a fuller country study by Palmer (2005b), is part of a six-country study coordinated by the Centre of African Studies at the University of Edinburgh and funded by the UK Department for International Development (DFID). For information on the full project, and country studies for Kenya, Tanzania, Rwanda, South Africa and India, see [www.cas.ed.ac.uk/research/projects.html](http://www.cas.ed.ac.uk/research/projects.html)

<sup>2</sup> Ruth Kagia, of the World Bank, recently noted that in spite of major expansion of the education system during the last 30 years in SSA “many of the gains normally associated with education - better health, higher incomes, social cohesion, and greater equity - do not seem to have been realized by much of the population” (Kagia, 2005: 37).

<sup>3</sup> The primary school leaver issue was a big theme in the 1960s when there were efforts, for example in Ghana, to demonstrate skills training coupled with job creation could lessen the unemployment problem. In Ghana, however,

The MDGs have become a focus for many development agencies. The MDGs include two education targets (targets 3 and 4) that are concerned with universal primary education and gender parity. Nowhere in the MDGs are elements of post-basic education and training (PBET) mentioned.<sup>4</sup> Only with regard to gender parity is secondary education mentioned. Hence, the educational emphasis of the MDGs is obviously basic / primary education (universal primary education, UPE, by 2015). A literal interpretation of the MDGs could thus lead to a policy of diverting educational assistance funds towards basic education and away from senior secondary<sup>5</sup> and PBET more widely. However, if PBET is necessary for sustainable poverty reduction and the achievement of the MDGs, then the effect of donors' funding primarily primary, or basic education, could reduce the effectiveness of their spending at this level, as well as in other social development sectors due to limited higher skills capacity and externalities associated with PBET. It is therefore vital to review the evidence of the role that PBET has to play in developing a country's capacity to reduce poverty and promote growth.

This paper argues that it is very timely to revisit the evidence for supporting PBET in developing countries. But, as will become clear, this paper is not advocating a funding shift to *prioritize* PBET per se, rather it is commenting on the need to take a holistic view of funding education – that in order to achieve the correct skill-mix for poverty reduction and growth, all levels of education and training need to be supported.

- Firstly, this paper notes how a combination of international education target setting, supported by research findings on the importance of primary education, and the climate of opinion during the last 25 years, has affirmed a focus on primary, and later basic, education above other sub-sectors.<sup>6</sup> This is despite the recognition among many agencies of the importance of looking beyond basic education (in both directions).
- Second, we examine research evidence from Ghana, and elsewhere, on the *direct* impact uppersecondary education has on poverty reduction and growth.
- Third, we look more widely at the pathways by which PBET, including, but not limited to, upper secondary education, can contribute to poverty reduction and growth.
- Fourth, we examine a key concern regarding PBET in developing countries; that if PBET should be given more priority in educational financing, what is the right balance to achieve, and how is it achievable and sustainable? This section will take the example of SSS provision in Ghana and examine the issue of increased demand in the face of problems of access, quality, financing and relevance.
- Fifth, we examine the environment within which the education and training system operates in Ghana and assess the degree to which it catalyses education's developmental outcomes.

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schemes such as the 'Worker's Brigades' had little impact on the overall unemployment problem (Palmer, 2005b: 32-33).

<sup>4</sup> In this paper, post-basic education and training is used to refer to formal and informal skills development, secondary (upper) secondary and tertiary education. This is a wider concept than post-primary education and training (PPET) which is sometimes used to refer to lower secondary, upper secondary and a parallel technical and vocational education system.

<sup>5</sup> In Ghana, 'senior secondary' equates to 'upper secondary' in some other countries, and refers to formal secondary education after the basic education level (primary and junior, or lower, secondary).

<sup>6</sup> In fact, research findings over the last 40 years have pointed to the significance of the early years (see, for example Anderson and Bowman, 1965).

### Research Evidence, Target Setting and the Changing Climate of Opinion<sup>7</sup>

In the World Bank, as in bilateral funding of education and skills development, there has long been a tension between targeting particular sub-sectors, such as vocational training or tertiary education, for particular policy reasons, and a holistic approach to the education and training sector. For example, it is interesting to note that as early as 1980, the Bank was warning that the case for primary education should not imply a sudden change in policy towards other subsectors:

Renewed emphasis on the importance of primary education, its high returns relative to secondary and higher education, should not start the pendulum swinging too far in the other direction. High levels of knowledge are necessary for many people who serve the poor, both directly as teachers, health workers and agricultural extension workers, and indirectly as researchers, technicians, managers and administrators...[t]here is for some purposes no better or cheaper substitute for the formal disciplines of conventional schooling. (World Bank, 1980b: 49)

Targeted approaches are understandable as an investment decision, but one of the unintended consequences of such priorities has sometimes been a failure to engage with the education and training system as a complex and interactive whole. This importance of planning for education and training as an integrated sector has sometimes been lost as the agency pressure to emphasise a particular sub-sector such as non-formal education, diversified secondary schools, technical and vocational provision, or 'high level manpower'. Thus, the Bank's early focus on infrastructure and on technical and vocational education (Jones, 1992) inevitably had consequences for investment in other sub-sectors. These education loans in the first decade after the independence of many developing countries were, not surprisingly, in the areas that were linked to the production of high level manpower. Indeed, at the very time when the World Bank was pursuing its 'high level manpower' emphasis in the 1960s, Anderson and Bowman (1965) argued that it was primary education that was the important factor in development but this ran counter to the then current climate of opinion and so less attention was paid to it.

It was only later that a redirection of Bank funding towards primary education was signalled by the 1974 *Education Sector Working Paper*. From the very late 1970s and 1980, research evidence was outlining the importance of primary education to economic and social development (cf. Cochrane, 1979; Colclough, 1980; Lockheed *et al.* 1980). But, it was the 1980 World Bank *Education Sector Policy Paper* (World Bank, 1980a) that signalled a change in view – away from the manpower planning of the 1970s – towards emphasizing the value of general education at the primary level (Marlaine Lockheed, personal communication, 18<sup>th</sup> June 2004).<sup>8</sup> And at this time, the climate of opinion began to slowly shift in favour of primary education, with some attention given to the preschool years. But as late as 1988 the Bank's *Education in Sub-Saharan Africa* could still point to the fact that only 7% of all direct aid to African education was used to finance primary education (World Bank 1988: 103).<sup>9</sup> This clearly argued for an adjustment in priorities – and this duly came with the Bank and several bilateral donors after Jomtien and the target setting associated with universal primary education.

<sup>7</sup> This section draws in part on King and Palmer (2006a).

<sup>8</sup> That is not to say that the 1980 paper promoted primary only, as it was quite measured.

<sup>9</sup> This may be true of bilateral and multilateral aid, but it does not necessarily reflect the way in which national budgets addressed these issues.

Particularly since Jomtien, within the World Bank, and increasingly within other multilateral and bilateral agencies, education, and particularly primary education, have been held to have a powerful relationship with many other development outcomes, and, through these, with the reduction of poverty more generally.<sup>10</sup> This built on the “evidence” of research efforts in the 1960s. Funding for other sub-sectors of the education and training system slowly waned as primary education became prioritised in education aid. So in the early 1990s, when Fuller and Holsinger (1993) produced a paper for the Bank on secondary education in developing countries, highlighting its importance, it did not have much impact in the Bank. It is likely that Psacharopoulos’ preoccupation with primary education’s rate of return meant that he did not pay much attention to the Fuller-Holsinger study (Wadi Haddad to King and Palmer, personal communication, 15<sup>th</sup> June, 2004). Psacharopoulos is well known for his many rate-of-return to education (RORE) studies in the Bank that were critical in allowing the education team in the Bank to show that basic education was crucial to make a difference to income. In 1988, George Psacharopoulos was head of a section of the education team concerned with research and evaluation.

Hence the primacy of primary education became symbolised in international target setting at Jomtien (1990), Dakar (2000) and to its position as an MDG (2000). Statements regarding the ‘developmental’ impact of basic, and especially primary, education on almost every other millennium goal is found in chapter one of the EFA Global Monitoring Report of 2002 (UNESCO, 2002), ‘Education for all is development’. The 2003 EFA Global Monitoring Report (UNESCO, 2003) also points out the positive benefits of education, and particularly basic education.

Donors responded to this climate of opinion to the extent that now, several key donors channel the majority of their aid for education into achieving the two Education MDGs. For example, DFID allocates approximately 80% of their aid for education to basic and primary levels (DFID, 2000: 36).<sup>11</sup> Between 2001-2002 USAID allocated 72.2% of total education funding to basic education (UNESCO, 2004: 191).

Now it seems as if the climate of opinion is beginning to shift yet again and research evidence, which has existed for many years is being brought into use. Several recent international documents highlight the importance of looking at post-basic levels of education and training (see, for example the Commission for Africa, the UN Millennium Project, the World Bank’s *Constructing Knowledge Societies*, the World Bank *Secondary Education Policy Paper*, and the new World Bank *Education Sector Strategy Update*).<sup>12</sup> For example, one of the objectives of the new USAID education strategy, *Improving Lives Through Learning* (USAID, 2005), explicitly focuses beyond basic education to enhance knowledge and skills for productivity.

That is not to say that agencies have been unaware of the importance of a well-balanced joined-up education and training system, and hence of the importance of PBET as well as basic education. In fact, as we noted earlier, the Bank recognised this back in 1980 (World Bank, 1980b).<sup>13</sup> It is just that,

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<sup>10</sup> Much of the earliest research argued that primary education was associated with growth rather than poverty reduction.

<sup>11</sup> The 2005 Global Monitoring Report estimates that 85% of total DFID aid to education went on the basic education level 2001-2002 (UNESCO, 2004: 191).

<sup>12</sup> Outlined in King *et al.*, 2005. See also King and Palmer (2006a).

<sup>13</sup> See King and Palmer (2006a) for more detailed discussion.

in practice, since Jomtein the emphasis on MDG targeting results in development assistance that is skewed towards basic education, and especially towards primary education.<sup>14</sup>

### **Education For All: For What? The Declining Benefits of Basic Education in Ghana<sup>15</sup>**

Despite the narrow targeting of the MDGs on primary education, it is becoming more widely acknowledged (e.g. by the World Bank and recently USAID) that there are no semi-automatic outcomes to investment in basic education, and indeed PBET is crucial for poverty reduction efforts. Heavy investment at the basic, especially primary, education level (while acknowledging that quality needs improvement at this level), without also widening access to, and improving the quality of, PBET, is insufficient for equitable and sustainable poverty reduction in Ghana or, indeed, other developing countries.

The narrowness of the education MDGs has both reflected and exaggerated a trend for donors in Ghana, and elsewhere, (like DFID and USAID) to focus on basic, especially primary, education. The government, on the other hand, has a more holistic view of education and training and is also keen to expand opportunities at the post-basic level.<sup>16</sup> This has led to government-donor disagreement, tension, and indeed questions about policy ownership (cf. Palmer, 2005b).

We argue that, for the education and training system in Ghana to bring about the kinds of expected developmental outcomes so often axiomatically associated with education, investment should not be too narrowly targeted at the MDG of UPE, but should treat the education system as an interdependent whole. Indeed, given the crucial multi-way synergies between all levels of the education and training system, if educational funding is too closely tied to achieving the MDG-UPE target by narrowly funding primary/basic education, and not other levels, it might be that this target will actually be missed and will likely be unsustainable post 2015. Indeed it is already admitted that for many of the poorest group of countries the 2015 target will be missed. The progress towards the Education MDGs in Ghana, and other developing countries, is already promising to produce some of the largest cohorts of basic education graduates ever witnessed. It is, therefore, crucial to ask, Primary Education For All: For What?<sup>17</sup>

Ghanaian parents and students, who are by far the best judges or ‘researchers’ of the education system, are very much aware of the poor quality of many schools at the basic level, and of the difficulty in finding formal employment upon completion (cf. Palmer, 2005b). The benefits of a basic education, alone, for many of the poor, are becoming questionable.

Traditionally, rate-of-return to education (RORE) estimates (cf. Psacharopoulos, 1994; Psacharopoulos and Patrinos, 2002) have long shown primary education to have both the largest

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<sup>14</sup> See the special issue of the *International Journal of Educational Development* edited King and Rose on international targeting in education (2005, vol. 25).

<sup>15</sup> In Ghana, basic education refers to six years of primary and three years of lower secondary. However, the new education reforms of 2004, propose to expand ‘basic education’ to include two years of kindergarten. See Palmer (2005b) for a full discussion on the new education reform in Ghana.

<sup>16</sup> Some donors in Ghana, notably the World Bank and a recent Spanish grant facility, do have new programmes in support of post-basic, principally tertiary level, education, but the overall emphasis of donor support is at the basic education level. It should also be pointed out that DFID, for example, contributes 45% of its total aid budget to multilateral institutions. 22% of this 45% (ie c.10% of DFID’s aid) goes to the World Bank. Hence it could be argued that DFID indirectly supports post-basic education through Bank projects ([www.dfid.gov.uk](http://www.dfid.gov.uk)).

<sup>17</sup> The question Education for What? is critical and decades ago spawned a series of innovations to bring usable skills to primary school leavers.

private and social returns for SSA, and the most recent average RORE continue to show this (Table 1). RORE have been used to strongly argue for prioritising investment at the primary education level in developing countries.

**Table 1. Returns to Education, by level (full method), Sub-Saharan Africa (latest year)**

Social			Private		
Primary	Secondary	Higher	Primary	Secondary	Higher
25.4	18.4	11.3	37.6	24.6	27.8

*Source:* Psacharopoulos and Patrinos, 2002: 13

But these averages for SSA mask very different country data, which have been changing over time. For Ghana in 1967, the social returns to primary education were the highest (table 2), whereas the private returns were highest at higher levels of education. In 1967, the returns to secondary education were lower than those at the primary level.

**Table 2. Returns to Education, by level (full method), Ghana (1967)**

Social			Private		
Primary	Secondary	Higher	Primary	Secondary	Higher
18.0	13.0	16.5	24.5	17.0	37.0

*Source:* Psacharopoulos, 1994: 18.

For Ghana in 1991, it was at the Senior Secondary school (SSS) level that the private and social rates of return are the highest (table 3). The private and social returns to SSS (vs. Junior Secondary School, JSS) are higher than the returns to JSS (vs. primary).<sup>18</sup> At the higher level of education, the private returns have dropped significantly since 1967, suggesting that the increasing numbers of youth graduating at this level has not been matched with an increase in the availability of waged jobs, and/or that the quality of education has declined.

**Table 3. Returns to Education, by level (full method), Ghana (1991)**

Social				Private			
Primary (vs. no education)	JSS (vs. primary)	SSS (vs. JSS)	Higher (vs. SSS)	Primary (vs. no education)	JSS (vs. primary)	SSS (vs. JSS)	Higher (vs. SSS)
11.2	10.6	14.0	7.2	19.4	13.5	19.5	9.1

*Source:* Canagarajah and Thomas, 1997: 46.

The Human Development Africa Region World Bank report comments on the figures in table 23 from Canagarajah and Thomas (1997), noting that the relatively low rates of return to JSS (private at

<sup>18</sup> Both JSS and SSS in Ghana are three years in duration.

13.5% and social at 10.6%) may reflect that JSS not only does not prepare the large number of students who finish JSS to qualify for SSS but also inadequately prepares them for labor market participation. In contrast, the high rates of return to SSS (at 19.5% and 14% respectively) indicate that SSS seems to be functioning as terminal education for entry into the labor market.<sup>19</sup> (World Bank, 1998: 24-35, cited in Akyeampong, 2002: 19).

However, the RORE analysis has been strongly critiqued by Bennell (1996) on numerous counts who concludes that “the conventional RORE patterns almost certainly do not prevail in SSA under current labour market conditions” (*ibid*: 195).<sup>20</sup> This is largely because RORE analysis calculates the returns to education for wage earners. Hence, given that the majority of people in Ghana (and SSA more generally) are not wage earners, RORE estimates are very problematic and can be misleading. Bennell (1996) further comments that, “the oft-repeated assertion that public investment in education is relatively attractive because actual social ROREs are relatively high vis-à-vis other types of investment can probably be no longer sustained in many SSA countries, in particular where wage employment opportunities remain minimal and traditional agricultural practices persist” (*ibid*). Others have noted that the standard Psacharopoulos-type RORE estimates are of limited use since they do not take the quality of schooling into account and hence can provide misleading (policy) information to decision makers (*cf.* Glewwe, 1996). The value of Psacharopoulos-type RORE estimates for Ghana is therefore questionable given the country’s huge informal economy.<sup>21</sup>

While acknowledging the limitations of quantitative calculations, and RORE estimates for SSA in particular, new research evidence suggests that the primary school on its own has a limited effect on poverty reduction. As we shall argue, investments at the primary level have to be complimented by suitable investments at the post-primary level and by investments in a wider supportive environment in order for education, at any level, to result in the kinds of positive outcomes associated with it.

Other quantitative estimates for returns to education, such as Mincerian returns and regression analysis, point to the importance of post-basic levels. Appleton, Hoddinott and Mackinnon (1996) note that the pattern of private returns to education being higher for higher levels of education is common across SSA.<sup>22</sup>

Recent quantitative research evidence from Ghana (*e.g.* Canagarajah and Pörtner, 2003; Teal, 2001; World Bank, 2004: Annex K) also points to the importance of formal post-basic education as a means of accessing higher incomes and hence combating income poverty. Statistical analysis shows that ‘there appears to be low return to having a primary education’ (Canagarajah and Pörtner, 2003: 59), and that middle school education (or JSS) has only a marginal impact. A World Bank report finds that ‘significant positive returns are only found for senior secondary and tertiary graduates’

<sup>19</sup>World Bank, 1998: 24-35, cited in Akyeampong, 2002: 19.

<sup>20</sup> Nonetheless, Bennell is not arguing that because the present estimation strategies are not working fully, there should be a switch to prioritizing post-basic levels.

<sup>21</sup> For a history of the informal sector concept in SSA see Palmer (2004a), and Palmer (2006) for the informal sector in Ghana.

<sup>22</sup> Among other studies which find falling returns to lower levels of schooling (or, put another way, increasing returns to higher levels of education) are van der Gaag and Vijverberg (1989) for Côte d'Ivoire, Moll (1992) and Fallon and Lucas (1996) for South Africa, Zambia and Zimbabwe, Jensen and Westergaard-Nielsen (1996) for Zambia, and Söderbom, Teal, Wambugu and Kahyarara (2003) for Kenya and Tanzania (cited in Kingdon, Sandefur and Teal, 2005: 30).

(World Bank, 2004: 197). Two main inter-related propositions for the declining returns to schooling in the early years can be suggested:

- The education and training *delivery context* has declined, leading to a decline in quality teaching and learning;
- The *transformative context* within which an education and training system should operate might not have been sufficiently supportive to catalyse expected outcomes.

We shall discuss each of these in turn.

The first proposition is that the weakness of the education and training *delivery context* has led to declining quality at the basic education level which in turn has led to the decreased benefit to lower levels of education – and decreased returns to education. The ‘delivery context’ refers to factors that will ensure or inhibit the sustainable provision of a quality education system itself, such as the financing of education; availability of teachers and educational managers; the educational infrastructure; attitudes towards education; a supportive home and community environment; and the opportunities for progressing up the educational ladder.

Our discussion of the returns to education, above, has so far made no mention of the quality variable and assumes that each additional year of schooling provides some incremental value to the learner. But this assumption is clearly fallacious. A child that receives six years of primary schooling in Northern Ghana, where textbooks are absent or inadequate, teachers often do not turn up, there is no blackboard and the rain floods the classroom in the rainy season will obviously have very different returns to schooling than their contemporary in a well-resourced school in Cantonments in Accra. Issues of schooling quality are absolutely critical (cf. UNESCO, 2004; Weale, 1992: 1).<sup>23</sup> Indeed, there exist numerous studies showing that school quality is an important determinant of the rate of return to education (for example, see Behrman and Birdsall, 1983; Glewwe, 1999; Hanushek, 1995). For Ghana, Glewwe (1996) estimated the returns to three types school quality improvements<sup>24</sup> and found that “the rates of return to those interventions were often higher than those from an additional year of schooling” (Glewwe, 2002: 469). However, what Glewwe does not point out is that it is not the provision of these items that makes any difference *per se*; rather it is how they are used by the teachers that is important for improving quality.

One of the reasons for the decline in the quality of basic education, and hence the declining returns to lower levels, might be that the post-basic education and training environment has now become unsupportive to the basic education level, thereby disabling outcomes in the early years (see also Section 3 below). Given the investment focus in Ghana on primary or basic education to a greater extent than on the post-basic level, the lack of teachers and educational managers, who are products of post-basic education, may have resulted in this declining quality at the lower levels (King and Palmer, 2006a: 22-33; Palmer, 2005b).<sup>25</sup>

The second proposition is that, given that there are no semi-automatic outcomes to education, the *transformative context* within which an education and training system should operate might not have been sufficiently supportive in Ghana to catalyse education development outcomes. The ‘transformative context’ refers to the enabling environment *outside* of the education system that is

<sup>23</sup> The most recent Education For All Global Monitoring Report (UNESCO, 2004) examines the critical importance of the quality of education on outcomes.

<sup>24</sup> These included; providing two more textbooks per student, providing blackboards and repairing classrooms with leaky roofs.

<sup>25</sup> See Palmer, 2005b: 90-95 for a discussion on educational quality in Ghana.

required to transform education and skills training into developmental outcomes, including poverty reduction. This includes, for example, the growth in the economy and availability of employment opportunities; decent work deficits; facilitative ‘infrastructure’ for enterprise; meritocratic access to both the formal and informal labour markets; technological capabilities; social networks and institutions; cultural values and attitudes; infrastructure and many other factors. For example, if education benefits accrue from obtaining employment and hence raising incomes, then it might be that the declining opportunity in the labour market has caused the decline in benefits of just having basic education. Indeed, Kingdon, Sandefur and Teal (2005: 31) note that “the market for human capital is central in explaining the wages of the highest income workers”.

A further related reason for the unsupportive nature of the transformative context might relate to the primacy of basic education (compared to post-basic education) regarding investment and expansion. As we note below (section 3), it has been argued elsewhere (King and Palmer, 2006a) that the post-basic system itself contributes to the development of the wider environment beyond education – which can help catalyse basic education outcomes.

Further, in looking for some of the underlying reasons for the failure of expected outcomes of education to materialise, it is interesting to revisit some of the research that underpinned the policy support to primary education in the 1980s and beyond. Indeed, if one examines policy literature it is far from uncommon that the alleged positive developmental outcomes of basic education are frequently cited as self-evident, without reference to the original studies upon which the links between education and productivity were first proposed (cf. King and Palmer, 2006a; King, Palmer and Hayman, 2005). And, looking back at some of the early research upon which the policy literature draws, one can see that research evidence is often misrepresented to fit with the then climate of opinion (ibid.). For example, the well known finding that four years of education increases agricultural productivity (cf. Lockheed et al. 1980) has frequently been misrepresented. Lockheed et al. actually argued that education only had an impact *in a supportive modernising agricultural environment* – an environment far removed from the largely traditional rural farming realities in sub-Saharan Africa today (King and Palmer, 2006a; King et al., 2005).

But it is not just higher incomes that appear to be related to upper secondary education levels. Research evidence from Ghana, and other developing countries, shows the importance of upper secondary and other post-basic levels in relation to labour allocation to more productive activities, health indicators, remittances, and the ability to make use of technological advances (cf. Palmer, 2005b). Lewin further highlights the importance of secondary education and points to a number of reasons why it is timely to refocus educational financing to include this level (Lewin, 2004).<sup>26</sup>

### **Post-basic – Basic Interactions**

The contemporary formal post-basic system in Ghana in general excludes the poor, with most of the poor only able to access a basic education at best. But this should not be a reason that, in order for funding to be pro-poor, only the primary/basic level should be targeted to achieve maximum impact. If post-basic education is to become less exclusive, there must be new investments directed towards

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<sup>26</sup> 1. EFA policies have led to a massive increase in primary school leavers. 2. MDG2 and MDG3 are unachievable without expanded post-primary involvement. 3. Secondary schooling helps to reduce HIV/AIDS (MDG6). 4. As primary school becomes universalised, participation at secondary level will become a major determinant of life chances and a major source of subsequent inequality. 5. National competitiveness depends on higher levels of education. 6. Secondary curriculum reform has been neglected. 7. Secondary education is crucial to post-conflict situations; 8. Increased access to secondary is not possible under current cost structures.

improving access of the poor to post-basic education (cf. Lewin, 2004), and an understanding of all that is entailed by PBET, in a context of investment in small business to allow the skills to take root.

There are three main pathways to poverty reduction that PBET help create even though the poor are very seriously under-represented at this level. The first pathway involves poor people themselves who, despite the numerous barriers faced, manage to gain access to PBET and are able to use their education and skills to improve their livelihoods directly.

The second is the role of PBET in the development of a wider educational environment that improves the outcomes of primary/basic education. The *delivery context* at all levels of the public education and training system is weak: hence the context in which education and skills are delivered does not lead to the expected outcomes of the education and training system. Post-basic education, through training teachers, developing new curricula, training educational managers and supervisors has a key role in raising the quality and improving the delivery context of education at all levels. Increasing the quantity and quality of basic education in a country without also increasing the quantity and quality of post-basic education and training will inevitably result in capacity constraints. This is most obviously illustrated by the huge increases in primary enrolments in many developing countries over the last decade, and the resulting dilution of quality due to lack of trained teachers, educational managers and supervisors. Moreover, if the growth in the number of basic education students in Ghana is to be maintained, these students, and their parents, need to see adequate, accessible and meritocratic post-basic education and training opportunities. Hence, the perception of access to the formal PBET environment has a direct effect on basic education completion as well as on the motivation of students to perform well at school. Without improved access to the PBET level, basic education outcomes in Ghana will suffer.<sup>27</sup>

The third is the role of PBET in the development of the wider non-educational environment - eg. training agricultural and health professionals, employment creation, developing a knowledge economy, stimulating economic growth and promoting innovation, inventiveness and research that catalyses education-developmental outcomes at all levels of education. For example, Barro (1999) concluded that it was secondary and tertiary education, not primary, that has an impact on the economic environment. Furthermore, the World Bank's *Constructing Knowledge Societies: New Challenges for Tertiary Education* argues the crucial importance of tertiary education, not just for developing professionals in education and health, but for creating a high level institutional capacity that is required for economic growth and poverty reduction (World Bank, 2002: xx). Thus PBET contributes to the development of a supportive *transformative context* that catalyses a country's education and training outcomes (at all levels).

### **Senior Secondary Schools in Ghana: Increased Demand in the Face of Problems of Access, Quality, Relevance and Financing**

If we are arguing for a more balanced education and training system, a key issue is the balance to achieve, and how to achieve and sustain it. In taking a more holistic view of an education and training system and looking for ways to expand PBET in developing countries, we are faced with numerous concerns. This section takes the example of SSS provision in Ghana and examines the issue of increased demand in the face of problems of access, quality, financing and relevance.<sup>28</sup>

<sup>27</sup> For a general discussion, see King and Palmer, 2006a. For evidence from Ghana, see Lavy 1996.

<sup>28</sup> We might equally have taken the example of other forms of PBET, such as TVET or skills training more generally to discuss here. By discussing only SSS in this section it is not suggested that support to other forms of PBET, especially skills training, are not also needed. See section 6, this paper, for a brief note on skills training. For a fuller

### Access

In recent years in Ghana, there has been increased demand placed on formal academic second-cycle (and tertiary) institutions. These increases were not foreseen in the Annual Education Sector Operational Plan 2003-2005 (GoG/MoEYS, 2003). Over the period, 2001-02 to 2004-05, total university enrolment has increased by 59% and total polytechnic enrolment has increased by 22.2% (table 4). Over the period 2002-03 to 2004-05, SSS enrolment increased from 301,120 to 333,002 (c.11% increase) (table 4).

**Table 4. Access indicators for SSS and Tertiary Education**

	Actual				Target
	2001-02	2002-03	2003-04	2004-05	2004-05
<b>SSS</b>	-	301,120	328,426	333,002	262,410
<b>University</b>	16,184	-	63,576	73,410	45,537
<b>Polytechnic</b>	20,422	-	24,353	24,983	21,872

Source: GoG, 2004b; GoG, 2005

Indeed, at the same time that many donors are trying to achieve the education MDGs (particularly UPE), it is now very difficult for the Ghanaian government to curb demand for formal second and tertiary education. For example, at the SSS level demand is increasing for three reasons: *i*) student and parental demand; *ii*) the decline in the occupational currency of the basic education certificate (BECE); *iii*) the political consequences of capping second-cycle education.

This increase in the demand for SSS level education is to be expected. Firstly, over the next few years the government of Ghana will see the first EFA cohorts of the mid 1990s graduating from JSS, and many of these graduates – and their parents – will want to continue further in education. Secondly, as more and more JSS graduates are produced, year on year, there will be a gradual decline in the occupational currency of the BECE. Hence, there will be increasing pressure to obtain higher qualifications as the BECE loses value. Indeed, it might be argued that the majority of formal sector jobs now require a post-basic educational qualification. Thirdly, the demands of parents and JSS graduates for better access to second-cycle education, if not met, could have serious political ramifications.

Approximately 35% of JSS graduates gain access to the three year SSS.<sup>29</sup> Access to formal SSS education is usually out of reach of the poor. A recent study revealed that the poorest 10% of Ghana's population is unlikely to benefit from public expenditure on either secondary or tertiary levels (Danso-Manu, 2004). A key question, therefore, is how is it possible to get more of the poor into formal second-cycle institutions so that they get improved access to the 'direct benefits'?'<sup>30</sup>

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discussion on skills training in Ghana see Palmer (2005a; 2006), or King and Palmer (2006a; 2006b) for a more general treatment of the issues.

<sup>29</sup> Although the proposed new education reforms would extend this to four years, this decision seems to be unpopular in Ghanaian civil society and among some development partners.

<sup>30</sup> Another question is what other post-basic options exist for JSS graduates, for example in skills training, and how can these be supported. (See section 6 of this paper).

***Quality***

The expansion of the second-cycle level in Ghana leads to the possibility of quality dilution. Just as the massive expansions in primary education has led to reduced quality in many developing countries, there exists a real possibility that rapid expansion of the second-cycle level will reduce quality. In Ghana, the quality of many second-cycle institutions is already low, as seen by low exam scores. Teachers' salaries are low and are often delayed, which results in a deterioration of morale and commitment and often forces teachers and instructors to seek additional sources of income, perhaps resulting in less time spent in the class room and hence impacting on quality. With approximately 90% of the educational budget spent on salaries, little is left for educational investment in Ghana (see Palmer, 2005b). This results in poor quality teaching infrastructure (class rooms, work-shops, libraries, laboratories, furniture) and learning materials (text-books and other teaching materials).<sup>31</sup>

***Financing***

The costs of hugely expanding the second-cycle level will be well beyond the already stretched education budgets of most developing countries, meaning that increased access to this level is not possible with current cost structures (cf. Lewin and Caillods, 2001). In the case of Ghana, there are serious questions to be asked about how the expanded vision of secondary education will be funded. There is concern among some of the donors that the rapid expansion of post-basic levels of education in Ghana (seen by enrolment figures in table 4) risk undermining the push for the education MDG of UPE by 2015 (cf. Palmer, 2005b). For example, one education advisor of a major development partner made it clear that the preference was for the Ghanaian government to refocus on the MDG target of UPE, and that the increases in enrolments at the SSS and tertiary levels could result in a decrease in monies available for basic education.

Looking at the total resource envelope for education in Ghana (table 5) we see that resources to primary education, as a percentage of total resources, has decreased from 39.7% in 2003 to 30.7% in 2005. However, there has been an actual increase in resources to the primary level over the same time frame. At the JSS level, actual resources available in 2005 are similar to 2003, but the overall percentage of total resources for the JSS level has decreased from 22.1% in 2003 to 13.5% in 2005. The most significant increases in resources, in both percentage and actual terms, can be seen at the SSS and tertiary levels.

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<sup>31</sup> The decentralised nature of the education and training system means that District Assemblies are largely responsible for the construction and maintenance of infrastructure. However, competing demands at district level often mean that the funding is inadequate and that infrastructure projects are delayed.

**Table 5. Total Resource Envelope by Level of Education 2003-2005 (Millions cedis)<sup>32</sup>**

	2003*		2004**		2005**	
	Amount	% allocation	Amount	% allocation	Amount	% allocation
Pre-school	99,826	2.4	192,079	4.1	272,468	4.0
Primary	1,643,964	39.7	1,656,297	35.1	2,096,984	30.7
JSS	917,907	22.1	765,950	16.3	919,594	13.5
SSS	632,151	15.3	654,996	13.9	1,388,031	20.3
NFED	37,937	0.9	76,898	1.6	70,207	1.0
SPED	14,959	0.4	19,806	0.4	19,793	0.3
Teacher Education	167,580	4.0	212,370	4.5	266,718	3.9
TVET	46,765	1.1	53,667	1.1	93,483	1.4
Tertiary	577,479	13.9	1,030,489	21.9	1,553,305	22.8
MGMT and subvented agencies	5,655	0.1	49,759	1.1	145,204	2.1
<b>TOTAL</b>	<b>4,144,223</b>	<b>100%</b>	<b>4,712,311</b>	<b>100%</b>	<b>6,825,787</b>	<b>100%</b>

\* actual

\*\* estimates

Sources: GoG, 2005: 97; GoG, 2004b: 111.

Table 6 (below) shows that, as a percentage of donor resources, primary education funding has gone down from 68.8% in 2003 to 40.8% in 2005. But actual resources to the primary level have increased from 171 million *cedis* to 309 million *cedis* over the same time frame. Since 2004, the major contributors to the huge increase in available donor resources, particularly at the post-basic level, are the African Development Bank (support to Senior Secondary Schools for the upgrading of schools to model SSS standard); the World Bank (Education Sector Project, which has three components in support of capacity building in the Main Ministry and Ghana Education Service, in support of implementation of the Education Strategic Plan as it relates to basic education, and in support of tertiary education); and the Spanish Grant Facility (for the procurement of computers and other equipment for the polytechnics and the University of Development Studies).

<sup>32</sup> The total resource envelope includes GoG resources, Donor funding, Internally Generated Funds and Other sources (eg. GETfund, HIPC, DACF and EFA Catalytic).

**Table 6. Donor Resources by Level of Education 2003-2005 (Millions cedis)<sup>33</sup>**

	2003*		2004**		2005**	
	Amount	% allocation	Amount	% allocation	Amount	% allocation
Pre-school	2,846	1.1	3,395	4.1	3,817	0.5
Primary	171,239	68.8	233,567	35.1	309,535	40.8
JSS	50,349	20.2	27,300	16.3	29,635	3.9
SSS	0	0.0	52,326	13.9	85,755	11.3
NFED	23,200	9.3	52,326	1.6	46,200	6.1
SPED	0	0.0	0	0.4	0	0.0
Teacher Education	562	0.2	23,641	4.5	29,462	3.9
TVET	562	0.2	14,000	1.1	6,800	0.9
Tertiary	0	0.0	183,684	21.9	187,498	24.7
MGMT and subvented agencies	0	0.0	29,544	1.1	45,755	6.0
HIV/AIDS					14,492	1.9
<b>TOTAL</b>	<b>248,758</b>	<b>100%</b>	<b>619,783</b>	<b>100%</b>	<b>758,949</b>	<b>100%</b>

\* actual

\*\* estimated

Sources: GoG, 2005: 95; GoG, 2004b: 109.

The proposals set out in the 2004 White Paper on Educational Reforms (GoG, 2004a), include increasing the duration of SSS from three to four years and diversifying this level have huge cost implications (cf. Palmer, 2005b). These proposals worry development partners in Ghana who see them as potentially taking money away from basic, and especially primary, education (Palmer, 2005b). Nonetheless the government of Ghana appears to be very keen to push for this home-grown education strategy in spite of donor pressure to shift its thinking. But given financial constraints, it is not clear how the senior secondary level can be expanded significantly and quality ensured at this level, as well as quality improvements at the basic level achieved so that it does not deteriorate further. This leads to the question of which financing mechanisms are most appropriate for funding post-basic education and training expansion,

### **Relevance**

Making education more 'relevant to the world of work' has been the preoccupation of repeated education reforms in Ghana since the mid 19<sup>th</sup> Century (cf. Palmer, 2005b). The most current reform, outlined in the 2004 White Paper on Educational Reforms, seems to be taking Ghana backwards to the era of increased length of SSS (with the associated increase in recurrent expenditure) and into the realm of diversified secondary schools, whose effectiveness has long been regarded as questionable (World Bank, 1980a). Indeed, one of the underlying assumptions implicit in the 2004 White Paper on Education Reforms in Ghana is that the reforms will somehow solve problems such as unemployment. For example, the new diversified 'Senior High Schools' proposed in the reforms intend to train the youth 'for entry into the world of work'. This echoes previous educational reforms over the past 150 years and suggests that the government still believes that the solution to the unemployment issue in Ghana today lies in the secondary school, or rather what is taught in the secondary school. But as Philip Foster noted of Ghana back in the 1960s, 'schools are remarkably clumsy instruments for inducing prompt large-scale changes in underdeveloped areas,' (Foster, 1965: 144) and the unemployment problem cannot be solved through the school. In Foster's view, it is

<sup>33</sup> Donor resources for 2003/4 include DFID, IDA, ADB, SPAG, JICA, USAID, and UNICEF. Donor resources for 2005 include DFID, IDA, ADB, BADEA, SPAG, JICA, USAID, and UNICEF.

largely what happens outside of the school that determines how educational outcomes translate into employment outcomes. Unemployment is an economic, not an educational, problem.

### **Education, education, education. Then what?**

*Education for All and Work for All are two sides of the same coin*<sup>34</sup>.

But having a balanced basic-PBET system is still insufficient for the expected developmental outcomes to materialise from educational investment. In Ghana, as elsewhere, too much is often expected of the education system itself without concomitant support to the *transformative context*, the wider enabling environment within which education operates.

Ghana's policy places economic growth at the centre of its fight against poverty (GoG, 2003a: 42-3). It is the area of 'gainful' employment, particularly in the private sector that the government sees as 'the main engine of growth' (GoG, 2003a: 30) for Ghana to enter the 'golden age of business' (GoG, 2003b). Employment / self-employment creation is thus placed centre stage in the fight against poverty in Ghana. However, the government rationale is that before employment / self-employment can be created, the poor need skills and better education. Moreover, since budget constraints mean that the government cannot create employment for the people, their primary role is twofold: providing education and skills training, and creating an enabling environment for private sector growth. In the latter of these, support to private sector growth is largely concentrated in the formal sector, with informal enterprises receiving little support from government. Indeed, much of the emphasis in politics and policy remains on education as a main route to 'development', and the need for literate, skilled people as a prerequisite for poverty reduction is seen as essential. Ghana's President Kuffour was recently quoted as saying in a Ghana daily newspaper that 'Education is the key to development' (*Chronicle*, 2004). We have to ask, therefore, is there too much focus on the education and training system itself and too little focus, action and coordination on designing a supportive pro-poor informal economy strategy?

### **Conclusion**

To tackle the suggestion that the expected outcomes of basic education have not materialised, with research evidence pointing to the higher benefits of secondary and other formal post-basic levels compared to basic education, and to ensure that education at all levels is sustainable and has a chance to deliver some of the expected benefits, a multi-pronged strategic approach is required.

Firstly, when the quality dimension of schooling is considered, the low returns to the lower years of schooling imply that attention does need to be given to improving the quality and delivery context of basic education. Furthermore, primary education forms the basis of further learning, and since basic education feeds higher levels of schooling, a good quality basic education is essential to maintain quality outcomes at higher levels (Palmer, 2005b). However, this implication should certainly not be a signal to keep the focus on basic education alone, since improving the quality of basic education is also dependent on having a stronger and more equitable PBET system (Palmer, 2005b).

Moreover, the evidence from Ghana, that returns to education are higher at higher levels of schooling leads to another policy implication: who reaches these higher levels and on whose incomes is there impact? Indeed, this is a question almost never asked by economists. As we note above, the present status quo is for formal post-basic education in Ghana to largely exclude the poor, and for too much

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<sup>34</sup> Daniel and Hultin 2002: 2.

public money to be spent on secondary and tertiary levels.<sup>35</sup> While acknowledging the essential role that formal post-basic education plays in poverty reduction and growth (King and Palmer, 2006c), it is important that those receiving secondary or tertiary pay more for the privilege. The cost-sharing mechanisms at secondary and tertiary levels need serious consideration. However, what is also essential, particularly if fees are increased at formal post-basic level, is that the poor are not further marginalised. This would mean much more financial support to needy, but talented, basic education graduates so that they might participate in secondary and other post-basic levels of education. The government and donors, for example, might explore mechanisms by which they can provide funds to support the poor through post-basic education.

Secondly, it is worth underlining that PBET does not simply refer to formal education and training at the secondary or tertiary levels but encompasses technical and vocational education and training (TVET) that occurs in both formal and, more often, informal settings.<sup>36</sup> TVET has been particularly neglected in developing countries. In Ghana it has received too little emphasis, and one which echoes the international trend in the neglect of skills training. Skills training does not appear in the MDGs and has been side-lined in favour of investment in primary education.<sup>37</sup> In Ghana, donors largely do not work in this area, or where they have (such as the Bank's Vocational Skills and Informal Sector Support project 1995-01) the programmes have largely been judged unsatisfactory. Government budget allocation to the technical and vocational education and training (TVET) sector is small at just approximately 1.3%,<sup>38</sup> and there is virtually no support to informal sector training. However, various skills strategies aimed at providing the youth with 'employable skills' have been promoted by the government over the years. Current programmes include various public and private formal Vocational Training Institutes (VTIs), and other government led non-formal programmes such as Integrated Community Centres for Employable Skills (ICCES) and the Skills Training and Employment Placement programme (STEP). But their limited impact is not simply due to their limited scope when compared to the total numbers of youth who need skills, but also because their implicit objectives follow the underlying assumption of the Ghanaian skills development agenda – that the skills provided will lead to productive and gainful work. But there is virtually no empirical research evidence on the employment/self-employment outcomes of graduates from these programmes in Ghana.<sup>39</sup> For their part, the government would like to believe that the objectives are largely met: that the youth have successfully acquired marketable skills and become gainfully

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<sup>35</sup> Despite only 10% of the population achieving an education level of SSS of higher (GSS, 2000: 8, table 2.1), of the total resource envelope for education in 2005, an estimated 47% was allocated to SSS, teacher and tertiary education (table 5, this paper).

<sup>36</sup> Technical and vocational education and training (TVET) is used here to refer to education and training, occurring in formal, non-formal and (formal and informal) on-the-job settings.

<sup>37</sup> It is worth recalling that the Dakar, and especially the Jomtien, agreements made skills a much more explicit priority. The six Dakar goals included the goal of 'ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes' (UNESCO, 2000). At Jomtien, article five of the World Declaration included 'skills training, apprenticeships, and formal and non-formal education programmes' (WCEFA, 1990).

<sup>38</sup> The figure of 1.3% applies to the Ministry of Education and Sports in Ghana. However, other ministries, especially the Ministry for Manpower, Youth and Employment, is very much involved in skills development. Unfortunately, figures related to expenditure on skills training for this ministry were not available at the time of writing.

<sup>39</sup> Internationally, there are certainly a number of skills training projects which appear to have managed successfully to reach the poor and increase their incomes and productivity. The evidence, which is sparse, is that these initiatives are hugely demanding in terms of time, commitment, methodology, curriculum and support structures. Also the numbers actually reached are extremely small (King and Palmer, 2006b). See Palmer (2006) for some new evidence related to the employment outcomes of various skills training initiatives in Ghana.

employed. Further, while government intervention has been focussed on pre-employment skills training, there has been little attention paid to supporting traditional apprenticeships in the informal economy. Attention, therefore, needs to be given to making skills development, both delivered in the informal economy and pre-employment, more effective (Palmer, 2005a).<sup>40</sup>

Thirdly, the government needs to place a much greater emphasis on what happens when children leave school, early or not as the case may be, by creating supportive measures – particularly for the informal economy and dealing with the numerous decent work deficits that inhibit education and skills training from translating into poverty-reducing employment.<sup>41</sup> In Ghana, this would include, among other things assigning responsibility to one ministry for the informal economy<sup>42</sup>; reforming and substantially increasing support to existing micro- and small-enterprise (MSE) programmes like the National Board for Small Scale Industries (NBSSI) that are at present largely ineffective<sup>43</sup>; tackling the barriers that informal enterprises face in gaining credit and business support<sup>44</sup>; tackling health and safety issues. Likewise, donors need to refocus attention onto the informal economy. These issues noted here often appear in policy rhetoric but are still largely absent on the ground. In 2005, there are hopeful signs that a new informal sector strategy is being developed, but again Ghana's history is strewn with the wreckage of unsupportive MSE strategies and projects. In particular, the history of support to MSEs in the informal economy has not revealed much action beyond the political and policy rhetoric. Moreover, private sector development in donor circles too often excludes discussion of the informal economy (cf. Palmer, 2005a).

This paper has aimed to make the point that developing countries, like Ghana, require investment in all parts of the education and training system, and funding should not be narrowly channelled to basic education alone. This is recognised by the Ghanaian government and the new White Paper on Educational Reforms clearly spells out a strong post-basic rationale. At the same time that many development partners target the majority of their education funding towards basic education, there is, nonetheless, an increasing emphasis, especially from the World Bank, on the role formal PBET serves in meeting the MDGs and in reducing poverty indirectly among the poor. This holistic view is more likely to create the skill-mix needed for sustainable growth in Ghana. A second point highlighted in this paper, is that education, at any level, can only translate into poverty reduction and growth in the presence of a supportive environment.

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<sup>40</sup> See Palmer (2005a) for a full discussion on skills development in relation to Ghana's informal economy and the importance of developing a pro-poor informal economy strategy.

<sup>41</sup> Decent work, in ILO discourse, encompasses improvements in working conditions, reducing vulnerability and achieving improvements in productivity and quality. The ILO strategic areas regarding decent work include: Employment and labour issues; Standards (at the macro-level); Social Protection; and Social Dialogue (ILO, 1999).

<sup>42</sup> As of August 2005, the Ministry of Private Sector Development and the President's Special Initiative in Ghana has been assigned responsibility for the formulation of an informal sector strategy in Ghana. But it remains to be seen how inclusive this strategy will be, which elements of the informal sector will be supported and the extent to which this strategy coordinates informal sector support across the different ministries and sectors that the informal economy encompasses.

<sup>43</sup> The NBSSI needs reforming so that it functions as a facilitator agency, rather than as a service provider agency as is the case now. There needs to be less of a focus on the dynamic manufacturing enterprises only and more attention paid to the smaller enterprises that have potential.

<sup>44</sup> For example, the government should encourage the formation of mobile bankers along the lines of the Atwima-Mponua Rural Bank in Ashanti, but provide funding so that these 'mobile bankers' can also be trained to provide door-to-door business support in situ to informal sector enterprises. Having mobile bankers/business advisors would greatly increase outreach and is preferable to having 'static advisors' in an office, inaccessible to the entrepreneurs that need the advice (see Palmer, 2004b).

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# MARSHALL PLAN CONCEPTS AND TECHNICAL ASSISTANCE IN KHARKIV, UKRAINE

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## Abstract

The Marshall Plan was probably the world's most successful assistance program. The Technical Assistance Productivity Program, one of its components, brought 25,000 Europeans and several thousand other people from developing countries to the United States to learn about the latest techniques in management, technology and marketing. Study tour participants adapted American techniques and increased productivity at home. The United States Agency for International Development funded a series of similar study tours for businessmen from Kharkiv, Ukraine to the United States. This paper describes those study tours and their very positive results.

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## Marshall Plan Technical Assistance Program

One of the major challenges facing all development agencies, including USAID, is to stabilize developing and failing nations. One way to do this is to help make their economies viable. This will help developing nations improve incrementally and truly transform themselves.

The original Marshall Plan Technical Assistance Program was designed by James Silberman, Chief of the Productivity and Technological Development Divisions of the U.S. Department of Labor. Silberman meticulously defined the steps in the program and its basic technical assistance principles to get results; these principles, designed to transform societies, underpin current USAID programs, particularly the one described in this paper.

The Center for Economic Initiatives is the only organization to have adopted the eight Marshall Plan principles in its development work and extensive follow-up activities. The following principles characterize the approach for the original Marshall Plan and for CEI today.

1. *Select the best industries*, those that are likely to have the greatest economic impact on the local economy and standard of living. CEI's experience has shown that these industries include agriculture, construction, manufacturing, information technology and food processing. Banking and government regulations are also good candidates for investment.
2. *Gain commitment to change* at the top levels of key companies and government agencies. Make clear that tour participants have a responsibility to their organizations and their industries to implement new ideas and improvements.
3. *Choose the right people* strategically, by selecting future leaders and levers for change. The applicants must be decision-makers who can make things happen back home after the tour.

4. *Include a range of decision-makers* from private, public, and educational sectors. Government leaders often do not understand the problems of industry and agriculture. In this program, they have an opportunity to see which policies work and which do not.
5. *Create a mix of skills, experience and perspectives* by including people with functional and management experience from production to marketing. Include technical specialists, owners, and marketing specialists who can exchange information and ideas.
6. *Discuss* new ideas learned *daily* during the tour. Meetings led by the participants themselves will help identify ideas that can be tried at home and those that are less likely to work.
7. *Disseminate findings actively* in a detailed participants' report describing their findings, ideas, solutions, and insights. CEI has found that each participant discusses tour findings with more than 300 people after having returned home. Some give lectures to professional groups, about half publish articles in newspapers and trade journals and many show their tour video to professional colleagues.
8. *Follow-up* after the tour by visiting the participants personally to find out what ideas they have implemented. Document their lessons learned in case studies for use by others in the industry. Use your findings to improve future study tours.

CEI has been working in Kharkiv, Ukraine where it was funded by USAID to carry out 17 study tours for industrial and agricultural representatives from the former Soviet Union, to give them a first-hand look at modern technologies, management and marketing techniques in the U.S. Participants could adapt what they learned to increase productivity and compete successfully in a free-enterprise marketplace. CEI adopted the principles outlined above. The results and benefits were far greater than anyone had predicted; indeed, the Kharkiv government has reported an increase of more than 4% in GDP thanks to these tours and their subsequent impact.

### **CEI Study Tours**

CEI is located in Cincinnati Ohio, a major airline hub easily reached from Europe and Asia. Its location is ideal as a hub from which to organize study tours. Cincinnati is easy to access and enjoys very reasonable Midwest prices that keep program costs to a minimum. An industrial city in an agricultural area, Cincinnati is close to half of all U.S. industry, which is located within 500 miles of Ohio. The rich agricultural Midwest also offers outstanding examples to study tour participants of agricultural and food processing study tours and welcoming mid-western organizations.

Study tours for Ukrainian business leaders are very carefully planned. They have a clear purpose and clearly defined objectives. Participants visit their counterparts in the U.S who explain their operations and answer detailed questions. Tour members examine production, marketing, wholesaling, retailing, financing and regulation first hand, taking voluminous notes and preparing reports to see how they can adapt what they learn to their own situations.

### **Study Tour Basics**

Every enterprise participating in CEI study tours has been able to make at least one significant improvement at home; most have made several. Perhaps even more impressively, government policies have changed as a direct result of the program and educators have developed new class syllabi. For example, construction projects are now put out for competitive bidding, the prices of selected bread products were deregulated, and new livestock procedures are now being taught at the university level. The study tours produced the following results.

### ***Increased Milk to Market***

Dairy processors in Ukraine had complained that they did not have enough raw milk. After visiting Archer Daniels Midland, the large soy processor in Decatur, Illinois, Alexander Radchenko, president of the largest Ukrainian dairy on the mission, decided to promote soy as a milk substitute. He has done so with great success. Radchenko reported that more than 90% of the soy milk now goes into condensed milk, commonly used in Ukraine, and into other dairy products.

American calves are weaned within a few days of their birth whereas in Ukraine, weaning occurred only after three months. Whole milk fed the calf and did not reach the market. Soy milk is now being used to feed calves which are weaned from their mothers much earlier so that the cow's milk can be commercialized. Participants on the Livestock study tours have confirmed that they are using soy formula as a cost-effective substitute that actually improves the health of the calf and reduces the time to market of the cow's milk. Long lines of farmers await soy milk deliveries at dairies.

### ***Reduced Calf Mortality***

In the United States, newborn calves are placed in individual pens. Their mortality rate is typically 5%. In Ukraine they were not separated from their mothers, and the mortality rate was 15%. Anatoliy Gatsko of the Gagarin farm reports that when he adopted individual pens on his farm at a very low cost, he reduced mortality rates among his calves to U.S. levels.

### ***Packaging and Branding***

In Ukraine advertising is used to dispose of shoddy goods only. For example, one baker on a study tour described how he expanded into new territory with unpackaged bread, naively anticipating no marketing problems because of the superiority of the product. During the study tour, participants were shown how packaging, logos and branding help consumers understand and remember products. Not only have most companies on CEI training missions adopted logos for their products, but this baker now has also packaged and sliced bread, expanding his market successfully.

### ***Cooling Systems***

Ukrainian food processing plants, dairies, and other businesses typically used cooling systems placed on the floor for easy maintenance. In the United States, they found cooling systems in the ceiling, from which cold air sinks. The Ukrainians immediately moved their cooling systems to the ceiling and saved 30% on energy costs – a significant figure in a country that imports most of its energy. One dairy even froze their milk before turning up the temperature.

### ***No-till farming***

No-till farming means that cultivating fields without plowing them. Although Ukrainians had heard about no-till, they did not believe that it worked. When, during study tours, they were taken by American farmers out into the fields, they were able to see first-hand the value no-till. The Ukrainians adopted no-till farming as a result of this visit are now enjoying savings in tractor fuel of 50%. This is astounding in a country where fuel costs account for about 65% of the total costs of running a farm.

### ***More Subcontracting***

In Ukraine, manufacturing firms typically produce every component of their products. This leads to high costs and to the virtual impossibility of keeping technologically current. In the U.S., manufacturers purchase items from outside suppliers of parts of their production chain rather than manufacture everything themselves. This lowers costs, and gets the product to market sooner: for the

consumer, this means higher quality products at lower cost. The obvious advantages of American subcontracting practices have encouraged study tour participants and others to adopt them.

### ***Electrical Systems***

In a Ukraine manufacturing operation, electrical cables to machine tools are run under the cement floor and brought up to electrical boxes resembling fire hydrants. As a result, there are usually many electrical boxes on the factory floor. Moving machines between locations often requires running new cables and installing new boxes. In the U.S., electrical power comes through cables dropped from the ceiling making it relatively easy, quick and inexpensive to move machines.

### ***Construction Organization***

Construction tour participants have been impressed by the organization of work at U.S. construction sites. They noticed that only a few workers at each site were required to do their work and each knew what to do. Work proceeds smoothly as a result, by contrast to Ukraine, where job responsibilities were not as well defined. Moreover, any single job usually requires many more workers than in a comparable American setting, and labor squabbles result in chaos. After CEI study tours, many companies have been reorganized. Job responsibilities become clearly defined and workers who cannot adjust are replaced. Companies are using foremen to direct activities rather than relying on orders from a single executive director.

### **Widespread Benefits of the CEI program**

The ratio of financial benefits to the cost of the USAID grant achieved by farms and firms participating in the CEI Marshall Plan type study tours are remarkable. The total financial gain reported by all study tour participants was \$18,037,845. The grant was \$167,000 for each of the six study tours for a total of \$1,000,000. This gives an 18:1 benefit/cost ratio that makes this program an extremely efficient way to enhance Kharkiv and Ukraine living standards and competitiveness.

The financial benefits achieved will continue year after year, while CEI tours are a one-time cost. There is no reason to believe that the U.S. technology and methods adopted by the Kharkiv firms will be abandoned or become obsolete very quickly. A 10-year projection of the cost/benefit ratio suggests an estimated total benefit of more than \$148 million, somewhat less than 10 times the initial financial gain of some \$18 million. For example:

1. For a livestock production study tour, farms achieved \$5,802,271 in increased production, sales profits, and cost savings; the CEI study tour cost \$167,000.
2. The Information Technology study tour for Slavutysh (Chernobyl) resulted in almost immediate enterprise cost savings and increased revenues of \$3,568,276.
3. The manufacturing and marketing fiscal results of the Household Goods and Appliances study tour brought revenue benefits of \$2,687,569 to nine firms.
4. The grain production study tour yielded \$992,410 in expanded farm output, sales, and cost economies, plus an additional \$1,569,535 in livestock benefits.
5. The Kharkiv and Slavutysh firms on the Construction study tours realized production and revenue increases of \$1,406,945 for Slavutysh (Chernobyl) and an estimated \$2,080,839 for companies in Kharkiv.

### **Conclusion**

The financial results of CEI tours were outstanding, due in no small measure to the methodology that proved so successful in the original Marshall Plan. CEI has systematically applied this strategic

approach and basic principles across a range of programs in Ukraine and in Kazakhstan and Moldova which has created substantive change with an excellent cost/benefits ratio.