Evaluation of the Aga Khan University Examination Board (AKU-EB)

TASK ORDER NO. REE-I-00-05-00053-00, TASK ORDER #8 WITH ACADEMY FOR EDUCATIONAL DEVELOPMENT

April - May 2008

This program evaluation is made possible by the support of the American People through the United States Agency for International Development (USAID.) The contents of this evaluation are the sole responsibility of the Academy for Educational Development and its authors, and do not necessarily reflect the views of USAID or the United States Government.

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David Carroll

Academy for Educational Development
Washington, DC

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For a complete list of those the team met with, and whose contribution we should like to acknowledge, see appendix B.

Key Evaluation Questions – Summary of Findings

Question	Key Relevant Findings
1) Did the program complete the activities in the cooperative agreement and in annual workplans?	a) The AKU-EB has been established with 37 full-time staff, mainly trained in-house b) At least 1,147 educators have participated in writing syllabuses, questions, assessment units, etc. c) A state-of-the-art computer-based examination processing system has been developed and implemented d) In 2008, AKU-EB offered HSSC-I (grade XI) in 24 subjects ; SSC Composite in 26 subjects; part-wise SSC-I in 25 subjects. e) In 2008, 5219 students from 83 schools took AKU-EB examinations. f) 161 schools have affiliated; 172 principals and 1812 teachers were oriented. g) 912 teachers (633 female) trained in item writing; a teachers trained in item writing; 300 teachers trained in delivering science practicals; 837 teachers (591 female) participate in writing 98 assessment units h) 68,550 copies of assessment units were distributed (some free, some at charge)
2) Did the program have an impact on the teaching methods of teachers trained by the AKU-EB?	a) AKU-EB Examinations require teachers to plan lessons, and use new questioning techniques and diverse learning materials. b) Teachers have been trained and given access to learning materials. c) Teachers report that the training was effective in establishing the required changes in approach and outlook. d) Teachers report that the learning materials are innovative and of good quality. e) Teachers who work in schools where such methods are practiced in lower grades welcome the change in approach. f) Teachers who know only the public sector BISE approach struggled to cope. g) Practical examinations require schools to actually carry out practical assessments. h) This has resulted in major changes in teaching of practical skills in science.
3) Did the program have an impact on learning outcomes and teaching methods?	a) AKU-EB exams require a much higher level and quantity of understanding and application than public sector BISE exams. b) In this, they are more faithful to the national curriculum c) But teachers have to teach and students to learn in new ways. d) Those who are accustomed to the approach from lower grades find the AKU-EB exams liberating; they consider the support provided by AKU-EB sufficient. e) Those who are not find it very demanding, and generally feel that they need more support, and the two-year SSC program is too short to make such a big change.

Question	Key Relevant Findings
4) Did the program contribute to the Government of Pakistan's (GoP) education reform measures?	a) AKU-EB is an innovative example of PPP, intended to stimulate change in public schools and BISEs; but public schools were denied affiliation by government; and public BISEs resisted the model. Benefits therefore went mainly to the private sector. b) The AKU-EB program directly supported GoP reform strategy in: i. curriculum, by setting out specific objectives, giving guidance on how to teach and assess them, and disseminating the information; ii. textbook reform, by making available lists of recommended materials and developing assessment units; iii. assessment reform, by defining a full range of assessment objectives and assessing them validly.
5) Did the AKU-EB model influence other local examination boards?	a) AKU-EB is a model of good practice consistent with the ESR Action Plan 2001-05 in: i. research and development; ii. paper setting; iii. computerization of exam processes; and iv. promoting fairness and transparency. b) However, its influence on the public BISEs has so far been limited by resistance from public BISEs. c) AKU-EB has therefore been more a stimulus to change than a model the BISEs followed.

Summary of Key Recommendations

AKU-EB to:

- develop as a matter of urgency a new marketing strategy in the light of experience to date, to focus on growing its core business as rapidly and sustainably as possible;
- support this by developing a more extensive development and support program for middle-class schools, perhaps in collaboration with the IED;
- strengthen in-house and overseas professional development activity with a view to succession planning;
- consider a change to a name which would be perceived more neutrally;
- review the Subject Officers' workload, to ensure that they have enough time for their examination-related duties;
- hold workshops to disseminate good practice in the use of feedback reports to schools;
- set up at least one branch office, in Lahore;
- establish a clearinghouse for learning materials developed by AKU-EB schools;
- identify schools which training programs and Professional Development Centers, and

local resource persons, to implement AKU-EB training locally;

- upload a much wider range of material to the AKU-EB web site, including model question papers, assessment units and training packages;

- establish one or more internet chatrooms for teachers in AKU-EB affiliated schools.

IBCC to:

- establish a working group to evaluate the AKU-EB innovations, and propose ways to achieve similar quality improvements within the public sector BISEs;

- promote the development of national or provincial examination syllabuses on the AKU-EB model;

- promote improved question paper quality and pos-examination analysis, on the AKU-EB model;

- promote a more rigorous approach to practical testing, similar to that of the AKU-EB;

- develop approaches to standard setting and reporting which would be more curriculum- or objectives-referenced, and stable across BISEs, years and subjects.

USAID to:

- use its leverage to push for the computer-based examination management system to be made available as widely as possible at a price which will allow developing countries to purchase the system;

- affiliating with AKU-EB, and candidates in low-fee schools presenting for AKU-EB examinations.

EXECUTIVE SUMMARY

The program requested by USAID to be evaluated, the Aga Khan University Examination Board (AKU-EB), is the first private-sector examination board to be established in Pakistan. The purpose of the evaluation was to determine whether the program completed the activities in the cooperative agreement, and what impact it had on teaching methods, learning outcomes and the public sector examination boards.

The evaluation methodology included: document study; visiting the AKU-EB to observe at first hand its systems and processes, public-sector examination boards for purposes of comparison, and schools affiliated to the AKU-EB; focus group interviews with AKU-EB staff, school principals and directors, teachers and students; and telephone and in-depth interviews with school directors, BISE and IBCC officials, and distinguished experts working in education in Pakistan.

The achievements of the AKU-EB program include the computer-based examination processing system which has been established at very low cost in the AKU-EB's headquarters; AKU-EB's success in developing examinations and question papers of uniquely high quality; the innovative approach AKU-EB has taken to practical testing in science; AKU-EB's technically sophisticated approach to setting and maintaining standards; the support AKU-EB provides to teaching via its in-service professional development programs; and its exceptionally user-friendly customer service. In all of these, AKU-EB is quite unique amongst Pakistani BISEs.

However, AKU-EB has also faced a number of challenges. Beginning in 2004, before the Board was even offering examinations, there was politico-religious agitation against it. It also faced resistance from the public-sector BISEs, which manifested itself in difficulties in areas such as the affiliation of public-sector schools, and dual affiliation (i.e., to a public-sector BISE and AKU-EB). The general public has also shown caution about the AKU-EB examinations, mainly through fear of the results. This fear may be largely unfounded; but it has reduced the numbers of candidates presenting for AKU-EB examinations well below what was predicted. As a result, AKU-EB faces a significant financial and marketing challenge if it is to achieve sustainability. As far as the team was able to assess AKU-EB's use of funds, the cost-benefit analysis showed that the AKU-EB made effective use of the funds provided.

The AKU-EB is an innovative example of public-private partnership in education; but its obvious potential to stimulate and support change in the public sector has not so far been fully realized, because public schools are unable to affiliate to the AKU-EB, and the public-sector BISEs seem somewhat resistant to the influence of the AKU-EB. The AKU-EB has been in the forefront of changes being introduced in education, and especially public examinations, by the Government of Pakistan. It introduced a number of innovations which were subsequently introduced on a wide scale in the public sector. However, because of the resistance of the public-sector BISEs, the impact of the AKU-EB has been less than its potential.

The AKU-EB is a brilliant technical example, which is a potential model for the future; but its impact depends in large part on its achieving financial self-sufficiency, and on reducing the resistance of the public sector BISEs.

LIST OF ACRONYMS

AED	Academy for Educational Development
AJK	Azad Jammu and Kashmir
AKES(P)	Aga Khan Education Services (Pakistan)
AKF	Aga Khan Foundation
AKU	Aga Khan University
AKU-EB	Aga Khan University – Examination Board
ARI	Annual Rate of Increase
BISE	Board of Intermediate and Secondary Education
CRQ	Constructed Response Question
EO	Examination Officer
ESR	Education Sector Reforms
FANA	Federally Administered Northern Areas
FATA	Federally Administered Tribal Areas
FBISE	Federal Board of Intermediate and Secondary Education
FY	Fiscal Year
GoP	Government of Pakistan
HIV	Human Immunodeficiency Virus
HSSC	Higher Secondary School Certificate
IBCC	Inter-Board Committee of Chairmen
IPCME	Inter-Provincial Committee of Ministers of Education
IR	Intermediate Result
IRT	Item Response Theory
JI	Jama'at-e Islami
KBIE	Karachi Board of Intermediate Education
KBSE	Karachi Board of Secondary Education
LMO	Learning Management Officer (ED-LINKS)
MCQ	Multiple Choice Question
MMA	Muttahida-Majlis-e-Amal
MNA	Member of the National Assembly
MoE	Ministry of Education
MoU	Memorandum of Understanding
NEC	National Education Census
NEP	National Education Policy
NETS	National Educational Testing Service
NOC	No Objection Certificate
NWFP	North-West Frontier Province
OMR	Optical Mark Reading
PITE	Provincial Institute of Teacher Education
PPP	Public-Private Partnership
SBA	School-Based Assessment
SDPI	Sustainable Development Policy Institute
SLO	Specific Learning Objective
SO	Strategic Objective

SSC	Secondary School Certificate
TRC	Teachers' Resource Center
USAID	United States Agency for International Development
WHO	World Health Organization

Purpose

The purpose of this evaluation was to evaluate the impact and effectiveness of USAID support to The Aga Khan University Examination Board (AKUEB) program. The evaluated program was implemented in support of the Interim Strategic Plan for fiscal years (FY) 2004 - 2006, which provides specific goals, strategic objectives (SOs), and intermediate results (IRs) for all funded programs.

The overall goal of the USAID Pakistan strategy is to "promote equality, stability, economic growth and improved well-being of Pakistani families". This overall goal is divided into four sector strategic objectives, with the USAID/Pakistan SO 3 encompassing the education sector.

USAID's Strategic Objective 3 (S03) aims 'to increase knowledge, training and infrastructure to develop high quality education programs for girls and boys throughout Pakistan'. Five Intermediate Results (IRs) were defined, as follows:

- IR 3.1: Strengthened Education Sector Policy and Planning
- IR 3.2: Improved Capacity of Teachers and Education Administrators
- IR 3.3: Improved Youth and Adult Literacy
- IR 3.4: Expanded Public-Private Partnerships to Improve Access and Delivery of Education Services.
- IR 3.5: Increased access to higher education

The AKU-EB program directly supported IR 3.2 and IR 3.4. The chart below describes the SO and IRs directly related to the AKU-EB program:

SO3
Increased Knowledge, Training, and Infrastructure Provided to Develop High Quality Education Program for Girls and Boys Throughout Pakistan
Indicators

- Number of USAID sponsored policies developed at the national, provincial levels or district level (ARI)
- Annual percentage increase in student enrollment in target schools in target districts (ARI)
- Number of students benefiting from Higher Education Assistance

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IR 3.2 – Improved capacity of teachers and education administrators
Indicators

- Number of teachers and education administrators trained (ARI)
- % of teachers meeting improved performance standards
- increase in students demonstrating improved performance

IR 3.4 – Improved access to and delivery of education services
Indicators

- Amount of private sector (profit and non-profit) investment in schooling
- Number of USAID-sponsored agreements formalized between private sector entities and public education
- Number of schools regularly developing and implementing School Improvement Plans in target districts
- Number of assisted infrastructure facilities brought into use

Aga Khan University Examination Board Program (AKU-EB)

The AKU-Examination Board was established in Pakistan under a presidential ordinance dated November 8, 2002. The ordinance stipulates that the certificates awarded by the AKU-EB for educational achievement up to the higher secondary level or its equivalent will be accorded full credit and recognition in Pakistan.

The Aga Khan University (AKU) implemented the program, "Establishment of the AKU-Examination Board" in Pakistan. The program was awarded in August 2003 and ended on December 31st 2007. The program aims were:

- To promote improvement of the quality of education in schools through examinations for the secondary school certificate (SSC) and the higher secondary school certificate (HSSC), training of teachers, and development of supplementary materials.
- To design and offer high quality public examinations based on the national curriculum for secondary and higher secondary education, with the consequential objective of improving the quality of education in schools.
- To promote the development of expertise in educational assessment and tests in Pakistan.

The program planned to achieve these aims by establishing an examination system using technical expertise and equipment from abroad, rather than by inviting an existing examining body to establish the system, to facilitate the growth of expertise in educational assessment and tests in the University and the country.

Development was phased, to allow for the registration of schools, preparation of teachers and students as well as examiners, and development of examination papers and systems. Work was scheduled to begin in the first quarter of 2003, and the first SSC examination as planned to be given in April-May of 2006.

The examination system was envisaged as being open to both government and private schools from the beginning, with examinations based on the national curriculum for secondary and higher secondary education, offered at an affordable cost, in both English and Urdu. In principle, any school would be able to affiliate, regardless of location, because the examinations and tests offered were based on attainment targets derived from the objectives of the national curriculum, rather than the content of specific textbooks, as is the case with the existing BISE examinations.

The system aimed to offer examination questions which assess the higher intellectual abilities of comprehension, application, logical thinking and problem solving, rather than being restricted to recall of the content of the textbooks. The learning milieu in affiliated schools would be improved through accreditation and periodic review leading to development of human resources, review of teaching-learning strategies, and provision of learning resources. When a school presented candidates for examination, their performance would be analyzed in detail and feedback provided to teachers, schools, curriculum planners and educational policy makers in order to improve school effectiveness, curriculum design, examinations, educational policies and support.

In this way the program aimed to demonstrate a credible and efficient model that might lead the local examining boards towards improvement of the quality of their examinations, and at the same time create capacity in Pakistan for education and training in educational assessment and tests.

Rationale for implementing the AKU-EB Program

The Pakistani education system is often characterized as "examination driven", in that access to higher education and future earning capacity is closely linked to examination success. As a result, schools and parents tend to judge academic performance through examination scores achieved by students.

There are two main public examinations at this time. The SSC, taken in grades 9 and 10, is both a terminal certificate for school graduates who then seek employment and a basis for admission to the next stage of education. HSSC is taken at grades 11 and 12, and forms the basis for selection of students for higher education and employment. Only high HSSC scores can secure admission to professional colleges of medicine, engineering, business administration and science and technology, the highest competitive options for higher education. Previously, grades 11 and 12 were known as "intermediate", and formed the first stage of higher education. Students graduated from secondary school at the end of grade 10, and sought admission to a college. Current government policy is that grades 11 and 12 should become part of secondary education, as is the norm internationally. However, this reform has been slow to take root, especially in the private sector.

The Boards of Intermediate and Secondary Education (BISE) are responsible for organizing and conducting SSC and HSSC examinations. At present, there are 26 examination boards in the country, each established by an Act of the respective Provincial or National legislatures. The locale of these examination boards is as follows: 20 BISEs with jurisdiction for major cities, regions or provinces/areas, a Board of Secondary Education (BSE) and another of Intermediate Education (BIE) for Karachi, the Federal Board of Intermediate and Secondary Education (FBISE) with national and international jurisdiction,; and three Boards of Technical Education, one each in Sindh, Punjab and NWFP.

At present the public examination system is dysfunctional in that, although the objectives of the national curriculum for the different levels of education are appropriate, the SSC and HSSC examinations evaluate mainly recall of prescribed texts, not attainment of the curricular objectives. This leads teachers to emphasize rote learning, and largely to neglect comprehension of concepts and application of knowledge.

Over several decades, this unremitting preoccupation with rote learning has been a major cause of declining quality of education. Propagation of this pattern of rote learning prevents the classroom application of teaching methodologies that encourage understanding of subject content and the ability to analyze and apply this knowledge. When students taught in this way become teachers themselves, they tend to lack both the necessary cognitive skills and a basic awareness of the weaknesses of the existing system, and the possible alternatives. The high stakes involved also tend to encourage corruption at all levels, from cheating in examination centers, through selling of questions or question papers up to exploitation of senior management roles for personal gain.

The need for reform has long been realized; but the public examination system has shown remarkable inertia. There is no apex body at federal or provincial level with a mandate to regulate the system as a whole. BISEs are responsible for the efficient conduct of the examination process within their geographical area, and are indeed quite efficient; but they have no significant role in developing the system; nor do they have the specialist resources in-house to develop new models, train question setters and teachers, and so on. Parents and teachers know the present system, and are reluctant to take risks with the future of the current generation of students.

This has led to strong demand, particularly from the private sector, for an alternative to the present public sector examination system. The small minority who can afford top-quality private education tend towards international qualifications such as the '0' and 'A' level examinations conducted in Pakistan by the UK Boards. The disadvantages of these are well understood, however, and the policy of GoP has been to encourage students to take national examinations.

In 1995, sixteen private schools requested the Aga Khan University (AKU) to establish an independent examination board. In 1998, the AKU appointed a Task Force to carry out a feasibility study for establishing an alternative examination system. The Task Force recommended the creation of an examination service as a function of the AKU, and the Board approved the recommendation.

A proposal for establishing an alternative examination service was made to the Ministry of Education in 1999 and again in 2001, and was approved in November 2002 by the issuing of an Ordinance establishing the Examination Board of the Aga Khan University. The Ordinance was consistent with the Government's policy to improve the public examinations by introducing an independent examining body as a competitor, through public-private partnership, given in the publication of the Ministry of Education titled "Education Sector Reform 2001-2004".

EVALUATION METHODOLOGY

Process

In 2008, USAID/Pakistan contracted Academy for Education Development (AED), to evaluate the Aga Khan University Examination Board program, and to determine its effectiveness in regards to cost as well as to stated program goals and objectives. The key strategic and priority questions tasked to the evaluation team to consider included:

1) Did the program complete the activities in the cooperative agreement and in annual work plans?

2) Did the program have an impact on the teaching methods of the teachers trained by the AKU-EB?

3) Did the program have an impact on learning outcomes and teaching methods?

4) Did this program contribute to the Government of Pakistan's (GOP) education reform measures?

5) Did the AKU-EB model influence other local examination boards?

The process used for gathering data for this evaluation included:

- **Meeting with SO3 Team:** the evaluation team had an initial briefing from the SO3 team.

- **Document review:** the team carried out an extensive review of briefing materials and documents provided by USAID/Pakistan and AKU-EB as well as the Government of Pakistan's Ministry of Education resources, documents downloaded from the BISE internet sites and received directly from BISEs during visits, and a survey of the archives of the English-language Pakistani press covering the period of the AKU-EB's interaction with the general public.

- **Telephone interviews with school principals and directors:** the team contacted as wide a range as possible of principals and directors of schools affiliated with AKU-EB, in areas to which it was not feasible for team members to travel.

- **Site visits:** the team paid an extended visit to the AKU-EB in Karachi, to meet senior management and key staff members, including training managers, ICT staff

and subject officers, and to review the AKU-EB processes and products. One member of the team also attended the AKU-EB Board meeting on May 12th. For purposes of comparison, team members also visited the two Karachi Boards, of Secondary and Intermediate Education, where they met with the senior management to review processes and products. The team also visited Karachi University and the IBCC.

- **Interviews and focus group discussions with school principals, teachers and students:** the team visited selected schools and held focus groups and/or in-depth interviews with school principals, teachers and students. The team also made follow-up interviews for the purpose of developing case studies.

- **Interviews with other key persons:** the team also met selected individuals having a particular interest in assessment and examinations in Pakistan. These individuals were chosen essentially on the basis of recommendations.

Appendix B contains a list of people met. Appendix C contains a list of sites visited, and Appendix D the basic Interview Protocols followed for both interviews and focus groups. Appendix E contains a list of documents reviewed.

Selection of Schools to be Investigated

In identifying schools to be investigated, the team worked from the list of affiliated schools provided to USAID by AKU-EB. This list provided information about all schools that had sought affiliation, whether it was granted or not, and did not distinguish the schools currently presenting candidates from those not presenting.

In order to capture as much as possible of the diversity in the private sector within a limited time and budget, the team investigated geographical clusters of schools in detail, rather than sampling individual schools at random. Schools within a cluster were contacted by telephone, to gather details of their affiliation history and plans for their future relationship with the AKU-EB. Where possible, principals and teachers from the schools in a cluster were then invited to join a focus group meeting. Some schools were then investigated in greater depth, as a basis for developing case studies:

- **Rawalpindi-Islamabad:** in the case of Rawalpindi/Islamabad, very few schools in the cluster had presented candidates, and planned to continue to do so. Three schools in the cluster were selected for follow-up, one each from among the elite private schools which also present candidates for O- and A-level, the lower-status for-profit private schools, and a charitable foundation running two schools for high-ability children of poorer people, one in Azad Kashmir, one near Rawalpindi.

- **Karachi:** in Karachi, appointments were mostly made through the AKU-EB. The team visited a diverse group of schools, including a charitable foundation running a school in a less affluent area, a large private school cooperates with the AKES(P), and an AKES(P) school. In addition, two focus groups were held, one with head teachers and one with teachers. Participants came from a range of

schools presenting candidates for AKU-EB examinations.

- **Lahore:** in Lahore, all schools affiliated with AKU-EB were contacted by telephone. Of the twenty-seven in the area, twelve agreed to attend a meeting and focus group discussion held in the Lahore Grammar School.
- In addition, a number of other schools outside these main clusters were contacted, to confirm the provisional findings. Table 1 below summarizes the data gathered from schools.

Table 1 – Schools contacted, visited, interviewed

Location	Contacted	Visited	Rep. Attended Focus Group	Representative Interviewed	Used as a Case Study
Rawalpindi	9	1	0	9	3
Karachi	19	3	19	3	0
Lahore	27	1	6	4	3
Other	9	0	0	9	0
Total	64	5	19	25	6

Strengths of the Evaluation Process

As indicated above, the selection of schools was designed to illuminate the diversity of the private sector, rather than to be statistically representative, and in this the team believes it was successful. The three clusters of schools sampled provided examples of very elite schools and schools run by charitable foundations for poor pupils, as well as the range of for-profit schools which are the backbone of private sector education in Pakistan. They yielded very different perspectives on the AKU-EB enterprise, and helped to illuminate the market in which AKU-EB has to find its niche.

All informants were very generous with their time. AKU-EB staff met with the team for extended periods, and provided generous follow-up information. School principals and teachers in particular were willing to meet us outside school hours, and discuss the AKU-EB at length, and very frankly and openly, with the team.

Challenges to the Evaluation Process

The time frame of the evaluation did not allow the team to gather data from all the 245 schools that have sought affiliation, even by means of a phone or mail questionnaire. The approach taken was therefore designed more to identify issues than to determine the statistical incidence of the different groups of schools identified. For example, a major issue has proved to be schools that having affiliated with AKU-EB, do not send up candidates. The team has therefore identified a number of such schools to determine what their reasons are.

That said, the team has been in some sort of contact with nine schools in Rawalpindi, twenty-seven schools in Lahore, and twenty-one in Karachi. These represent more than one in five of all the schools that have sought affiliation. In most, the team talked with both teachers and principals/directors. In a few, it was also possible to talk with students.

The team was able to analyze documents, both AKU-EB documents and the equivalents from different BISEs. Thus, statements about the differences between AKU-EB instruments and procedures and their BISE counterparts are based on, and supported by, evidence. The team was not, however, able to gather classroom observation data, nor (except in a very limited way) to analyze individual students' performance. The team therefore had to rely mainly on the reports of informants, backed up, where possible, by figures they provide.

OVERALL PROGRAM EFFECTIVENESS

In discussing overall program effectiveness, the evaluation team first looked at the indicators defined in the cooperative agreement. The AKU-EB's final report on the program to USAID uses a different matrix; but this was not available to the team until the very end of the evaluation period. The following tables were therefore adapted from the results matrix in the final quarterly report prepared by the AKU-EB[1].

Objective 1: To promote improvement of the quality of education in schools through examination for the SSC and HSSC, training of teachers, and development of supplementary learning materials

Performance Indicator	Definition	Method of Data Collection	Responsibility	Baseline	Target and Achievements
1.1 Improved quality of education in schools	Positive change in SSC and HSSC performance school by school, with standards maintained at a constant level	Routine AKU-EB post-exam. analysis by subject and school	AKU-EB	% of A1 and A grades in affiliated schools in the year prior to first AKU-EB examination, and in first AKU-EB examination	*In 2006 practice there were 1% A+ grades and 8% A grades. The same candidates in 2007 composite scored 10% A+ and 24% A grades*
1.2 At least 50 schools per year affiliate with AKU-EB beginning in April 2004	Number of schools attracted to the AKU-EB and able to meet affiliation requirements	AKU-EB records of affiliation fees	AKU-EB	2004 April data set	*Met for 2004 and 2005; not met for 2006 (31 schools added); 2007 (11) or 2008 (2 in January-April). Not met overall.*

[1] 18th USAID Quarterly Report Oct to Dec 2007.doc

Performance Indicator	Definition	Method of Data Collection	Responsibility	Baseline	Target and Achievements
1.3 Teachers move from relying on single text to attainment targets in exam. syllabus	T's have copies of examination syllabus and use more than one reference to support teaching. P's interact more with teacher and each other, less with textbook	AKU-EB inspectors check teachers have syllabus; review lesson plans; interview students	AKU-EB inspectors	Not established but currently reputed to be close to zero.	Textbook is not primary focus in at least 1 period a week in 70% of subjects in 80% of affiliated schools. *No data gathered*
1.4 Training of teachers	Pedagogic skills and subject understanding enhanced by exposure to assessment material; participation in marking; detailed feedback to schools.	Annual school inspection visits	AKU-EB	Data from all BISE in 2004 examination and following years for both SSC and HSSC.	Significant year on year increase in difference between school and private candidates due to training.
1.5 Development of supplementary learning material (SLM)	SLMs provide subject matter enrichment for teacher; learning activities for pupil; criterion-referenced assessment tasks; and form to report class results to AKU-EB for improving materials	Inventory of material available to schools.	AKU-EB and affiliated schools	0%	Materials prepared for 100% of SSC and HSSC syllabus topics deemed to need them

The implementation of program activities was excellent. The wide range of supplementary learning materials, providing subject matter enrichment for teachers, learning activities for pupils, and criterion-referenced assessment tasks were of good quality (indicator 1.5). The AKU-EB have not prepared materials for 100% of SSC and HSSC syllabus topics deemed to need them; but have provided a stimulus to schools and teachers to identify and develop further materials.

The AKU-EB provided a one-day orientation to 1812 teachers and 172 school principals. The Board also trained 912 teachers in item writing, 300 teachers in conducting practical examinations, and 837 teachers in developing assessment units. Overall participants rated the quality of the training as very high, and asserted that it had an impact on their teaching practices.

The team was not able to confirm directly that interaction patterns had changed, or that teachers relied on attainment targets rather than textbooks (indicator 1.3); but teachers interviewed did report having the examination syllabus, engaging in lesson planning and using materials from different sources. Librarians met reported strong demand for resource materials, although they also reported some difficulty in getting some materials from out of province.

After a promising start, AKU-EB is currently not achieving its affiliation targets (indicator 1.2). Applications for affiliation peaked at 120 in 2005, and have fallen in each succeeding year (although the 2008 figure is for four months only). Therefore, the target for school affiliations has not been met to date; and the slowing rate of affiliations suggests it is not likely to be met in the immediate future.

Table 2 – School Affiliations, 2003-08

Schools	2003	2004	2005	2006	2007	2008[2]	Total
Applied	1	66	120	38	18	4	247
Affiliated	1	44	72	31	11	2	161
Active	-	-	-	60	85	83	

As table 2 above shows, the number of schools currently affiliated with the AKU-EB, according to the database supplied by USAID, is 161. Not all of these affiliated schools are defined as "active" (i.e., presenting candidates for SSC or HSSC). Eighty-three, or 52%, presented candidates for one or other examination in 2008; but this number is likely to fall in 2009, because seventeen of the schools with candidates in class X in 2008 have none in class IX (i.e., are not presenting candidates for the first year of the new two-part examination).

The baseline proposed for indicator 1.1 (percentage of A+ and A grades in affiliated schools in the year before AKU-EB's first examination compared with the percentage achieved in the first AKU-EB examination) was probably inappropriate, because the public sector BISE examinations are acknowledged to primarily test recall rather than thinking, and vary widely in difficulty. The revised baseline, performance in AKU-EB's practice examination, may be more appropriate; but it is vulnerable to distortion by low student motivation (because it is low-stakes), and "practice effect" (because it is the first such test paper students have attempted). The first actual AKU-EB SSC examinations might therefore be a better baseline; but these took place only in 2007. It is therefore too soon to report on trends in achievement.

[2] January to April only.

Objective 2: To design and offer high quality public examinations based on the National Curriculum for Secondary and Higher Education

Performance Indicator	Definition	Method of Data Collection	Responsibility	Baseline	Target and Achievements
2.1 16 SSC subject exams designed and published by April 2004 16 HSSC subject exams designed and published by April 2006	Specification grid showing marks allocated to content topics and objectives, and illustrated with specimen materials. Goals for knowledge, understanding, application; no more than 50% knowledge marks in any subject.	AKU-EB WWW pages	AKU-EB Subject Committees	Examination papers of the other boards	*Target met for SSC. HSSC syllabuses not yet published.*
2.2 Schools servicing the middle income group, dissatisfied with quality of BISE exam affiliate to AKU-EB	Schools pay affiliation fees; register candidates for the examinations	AKU-EB records of affiliation and candidate fees	AKU-EB	Not established	At least 10% annual increase on baseline

The target of developing examination syllabuses and specification grids for SSC has been exceeded (target 2.1). The AKU-EB web site offers twenty SSC syllabuses for download. These syllabuses are well structured and highly innovative in Pakistani terms.

HSSC syllabuses are not yet available on the web site. However, the team was able to verify that AKU-EB unquestionably has delivered its full quota of examinations syllabuses and specification grids, and more. In 2008, it will conduct: HSSC-I (grade XI) examination in 24 subjects across five subject-groups (pre-engineering, pre-medical, science general, humanities and commerce); SSC Composite examination in 26 subjects; and part-wise SSC-I in 25 subjects.

Schools serving the middle income group are undoubtedly dissatisfied with the quality of both the public sector BISE examinations and their customer service (target 2.2); by contrast, the AKU-EB examinations and customer service were reported on very favorably. As a result, there was an initial rush to affiliate to the AKU-EB. However, many schools found preparing students for the AKU-EB examinations much more challenging than they had anticipated. As a result, many affiliating schools have never presented candidates; and a significant minority have given up after presenting candidates for one or two years. This now also appears to be reflected in a tapering-off in affiliations. The AKU-EB therefore needs to give attention to strengthening its business model.

Objective 3: To promote the development of expertise in educational assessment and tests in Pakistan

Performance Indicator	Definition	Method of Data Collection	Responsibility	Baseline	Target and Achievements
Overseas training in assessment successfully completed	At least six training months per annum from 1 Jan, 2005	Contractual requirement of training institution	AKU-EB	Nil	At least two staff members exposed to training per year, 2005-2008 The board in collaboration with IED is mounting a Certificate in Educational Assessment Course which is now in its second cohort *One attended five months course, 2 conference participants of 1 week each, and 2 attended the security printings of 2 weeks each.*

According to information provided by AKU-EB, overseas travel for training purposes has been limited to attendance at international conferences plus short orientation visits to examining bodies, as outlined in table G-1 (annex G) below.

The team is of the opinion that given the major differences in functions and organizational structure between AKU-EB and the public-sector BISEs, there is a lack in the national market of both desirable skills in assessment and examination, and relevant experience in managing a board on the AKU-EB model. More therefore might have been done during the program period to develop the professional/technical capacity of AKU-EB's middle management to face the challenges of the post-program period; and given the relative similarities between AKU-EB and examining bodies in various Commonwealth countries, a program of longer attachments (1-3 months) with Commonwealth examining bodies, plus tailored training in examination practice, might have been considered.

PROGRAM ACHIEVEMENTS/STRENGTHS

The program demonstrated significant technical strengths comparative to the public sector BISEs, which can be directly linked to the funding provided by USAID. These include: the examination processing system; the system for examination development; the support provided for teaching and learning; and the customer service procedures. The professional and technical capacity of the AKU-EB far exceeds that of all the public sector BISEs combined; and although it is not possible to assess at this stage the long-term impact on learning of participating in AKU-EB examinations, it is potentially very significant.

The AKU-EB Examination Processing System

Supported by program funding, the AKU-EB has established an integrated system for the development and management of examinations that makes extensive use of information and communication technology, and stands in marked contrast to the examination

processing systems of the public-sector BISEs, which continue to depend largely on manual labor, with limited technological support. This system has five main elements.

1) **Registration of Candidate Details:** Schools pre-register potential candidates in December, either by completing a scannable sheet or (where schools have the capacity) *via* a web-based form. The web-based process, called by AKU-EB e-enrollment, allows schools to update their candidate information on demand. Beginning in January, potential candidates have to register for the actual examination. AKU-EB sends out individual scannable candidate registration forms based on the pre-registration lists. In February/March, candidates confirm their registration, and if necessary, correct the information on the form and/or change their subject choices.

   E-enrollment is clearly superior to paper-based enrollment in both speed and accuracy. It has been very favorably received by users; in due course, it is expected that registration will be done mainly *via* the web-based system; although a paper-based option will be retained for schools lacking web access.

2) **Printing of Question Papers:** Once the registration data have been finalized, the AKU-EB is able to establish the database for examination processing, plan for the required examination centers, and print the required examination papers. A secure printer (the printer currently used is based in Dubai) is sent camera-ready copy for the test booklets, and, at the same, an electronic candidate list. State-of-the-art digital printing technology then allows the printer to print customized examination papers for all candidates (including candidate details and bar-codes on each page as required) and bundle the papers for eventual distribution.

   This approach is potentially highly secure. Question papers are only available in-country prior to the examination in electronic form. There is no need for human intervention in counting and bundling papers; and although the physical sealing of the packets still requires some human intervention, the packets can be sealed outside Pakistan, and sent directly via Habib Bank to the examination centers. Digital printing of question papers with bar codes is an integral element in the e-marking of question papers, because it allows data to be linked electronically, even when pages are separated physically.

3) **Marking of Question Papers:** Data for responses to multiple-choice questions are gathered on separate answer sheets and captured using a conventional OMR scanner; but the most striking innovation in the AKU-EB examination processing system may be the facility for e-marking of constructed-response questions. Candidates write their answers to constructed-response questions directly into the question-answer booklets. For processing, the booklet is cut into separate sheets. The cover page is discarded, and the separate pages are then scanned using an image scanner, and stored as a separate graphic image in the computer system. At this point, the pages are linked only by the bar code printed on each. Thus, it is not possible for anyone to know who wrote the answer by looking at the graphic

image itself; and linking up the separate pages of a candidate's answer book can only be done by reading the bar codes.

At this time, each scanner is capable of scanning and storing about 1000 page images per hour – i.e., 10,000 page images during a ten-hour working day.

Marking is carried out on-line, using the AKU-EB's proprietary e-marking software. Under the overall leadership of the relevant subject officer, markers work in teams of five markers plus a team leader. Each marker works at a networked workstation. Questions are distributed amongst markers (each marker marks a limited number of questions, rather than marking whole papers). The software presents the marker with the graphic image of a candidate's answer, plus the marking key or marking suggestions, and records the mark awarded. The team leader is able to monitor the standards of the team members in real time, with the option of sending some or all of any member's papers for re-marking. During the 2007 examination cycle, e-marking was carried out not only at the AKU-EB's main building in Karachi, but at a satellite site in Lahore, allowing teachers in a wider range of locations to participate.

This system has many benefits. It promotes marker reliability, by: limiting the number of questions each marker marks; providing them with marking hints; and allowing real-time statistical monitoring of individual markers' standards against the standard set by the chief examiners. It is virtually immune to corruption at the level of the marker, because: no marker sees more than a very few questions; it is all but impossible to guarantee that any individual's paper will go to any given marker; and team leaders are able to monitor a much larger proportion of markers' work than would be possible with paper-based marking.

As a result, all the problems associated with managing large quantities of paper are eliminated. Booklets do not get lost. It is theoretically possible for team members to work in any physical location, and still be coordinated, because the scripts can be accessed on-line. Teachers of the relevant grade can participate in marking, because their access is limited to the specific questions for the specific individuals they have to mark; and they cannot identify individual candidates' work. This is beneficial both for the quality of the marking and for the skills of the teachers. It is very efficient in its use of markers' time, and much less prone to errors in transfer of results than any paper-based system.

4) **Results Processing:** Results are made available on-line to registered candidates, as well as in the form of printed certificates. In terms of its public interface, the AKU-EB system is similar to those of the public sector BISEs; but because it makes much more extensive use of information technology, it is quicker, more accurate and less prone malpractice.

A further significant advantage of the system of scanned images of answer books is that it makes archiving all the documents connected with an examination a relatively straightforward process. There is no longer any need to store large

quantities of paper (a factor which normally severely limits not only the number of years for which examination-related documents can be kept, but also their accessibility). The graphic images can easily be stored in a compact and permanent form, for an indefinite period.

5) **Feedback to Schools:** Another big advantage of e-marking is that it provides test- and item-level candidate data which can be aggregated to inform schools and teachers on their relative performance. AKU-EB has developed a format for a school report, including graphical representations of data. A report in this format is sent to each school which sends up candidates, which includes:

    a. average achievement and grade distribution of candidates from school, overall and by subject paper, compared with previous year(s);

    b. average achievement and grade distribution of candidates from school, overall and by subject paper, compared with all schools;

    c. performance of candidates from the school in questions measuring knowledge, understanding and application, compared with all schools;

    d. item-wise performance of candidates from school, compared with all schools.

    All respondents expressed enthusiasm for the format of the feedback report, and said they used it. One school, St. Mary's Academy in Rawalpindi, shared with the team a PowerPoint presentation based on the feedback report which formed the basis of a day spent by the staff team in analyzing the implications of the results, in terms of changes in the teaching program, motivation of students, and contact with parents.

The AKU-EB System for Examination Development

Box 1 – excerpt from a Punjab BISE syllabus document

8	General Science	IX	Book: Punjab Text Book Board Lahore. Author: Prof. Nazir Ahmed Chughtai etal. Chapter I to VI Page No. 1 to 111
		X	Chapter VII to XI Page No. 112 to 211

In comparison with the public sector BISEs, the AKU-EB exercises much greater control over the test development process. This is done initially by means of examination syllabuses, derived from the national curriculum. The existence of these examination syllabuses, which were developed by the AKU-EB for the first time in Pakistan, and their distribution to all teachers, is a crucial factor in making the curriculum accessible to teachers as a set of goals, rather than simply as defined textbook content.

The content for the whole is divided into topics, and the topics are divided into specific learning objectives (SLOs). SLOs are categorized according the cognitive level (knowledge, understanding, application). On this basis, a scheme of assessment is developed. SLOs are summarized according to topics and levels. Marks are then allocated to each topic roughly corresponding to the number of sub-topics, and divided into MCQ and CRQ. It is AKU-EB policy that every topic will be examined. The public sector BISEs have no such specific policy, and also currently lack the tools to implement it, because of the nature of their syllabuses (see Box 1). The examination syllabus then gives brief guidance on the teaching-learning approaches to be used, and a short list of recommended texts and reference materials. The syllabus also identifies areas where development of learning support materials would be beneficial. The syllabus includes a list of definitions of terms. Finally, the scheme of studies and the list of practicals (where appropriate) are given as annexes.

Paper carrying total marks:- 75 (except English & Urdu)

Subjective	30 Marks	Time: 1:30 Hour
Objective	45 Marks	Time: 1:30 Hour

Detail of Marks for Objective Part will be as Follows

MCQ	10 Item	10 Marks
Completion	10 Item	10 Marks
Matching	09 Item	09 Marks
Short answers	08 Item	16 Marks

Box 2 – Typical BISE Scheme for Setting Question Papers

This comprehensive syllabus document, available from the AKU-EB's website, contrasts with the approach of the public sector BISEs, where the syllabus is in effect the textbook (see box 2), and only the number and type of items are defined[3], with the specific content left to the paper setter (see box 2). The AKU-EB approach is greatly superior as a means of controlling the content (and by implication quality) of the test paper, because it defines both the content topics to be tested and the cognitive levels at which questions should be set. It also assures that teachers and students need to cover the whole content of the curriculum, and provides them with a structure for planning that coverage.

Question Setting and Question Paper Assembly

As a national Board which offers SSC and HSSC qualifications for both English- and Urdu-medium schools, the AKU-EB follows the Schemes of Studies issued by the Federal Curriculum Wing.

Unlike the public-sector BISEs, where question paper setting is largely delegated to outside examiners, with limited in-house moderation, the AKU-EB actively involves teachers from participating schools in question setting, and has a relatively protracted process of question paper development, involving Examiners, Chief Examiners and Subject Officers. Having been recruited and trained, question setters send questions to

[3] The fact that some of the item types used by the public-sector BISEs, such as true-false, fill in the blanks and matching, are not technically very sound, should also be noted.

the relevant AKU-EB Subject Officer on an ongoing basis. These are then reviewed and, in the case of MCQ items, are pretested on Class XI students and analyzed using IRT, and selected on the basis of their difficulty and fit to the model. Subject Officers then develop one draft examination (for the MCQ) and two Examiners each develop one CRQ paper. These are reviewed by Chief Examiners, edited, and translated into Urdu where necessary. Subject Officers develop a reserve paper, in case of emergencies.

The AKU-EB process of setting questions and assembling question papers is quite protracted, but very effective in securing quality. In the first year of full operation, it lasted from August to the end of February. By contrast, the public sector BISEs normally commission individuals to develop question papers, and then either select one of them, or assemble a question paper from those on offer. All the copies required are then printed, bundled and prepared for distribution. This is all done during the night preceding the examination, in Boards with a predominantly urban clientele; or two to three days before, in the case of Boards with a more rural clientele, to allow time for distribution. From the point of view of the public sector BISEs, it must be acknowledged that the AKU-EB process is fraught with problems, because it involves a sizable number of individuals, working over a period of months. The security pressures on the public sector BISEs are such that the AKU-EB process would be too likely to lead to leaks. It is noteworthy that the Federal BISE, which is the only one to have a scattered clientele, including federally administered territories, cantonments and overseas schools, is also the one Board that has a chronic problem with leaking question papers.

Question Paper Quality

The preoccupation with security amongst the public sector BISEs inevitably has a cost in terms of the quality of the question paper. With the help of a small group of teachers, the team analyzed some model papers from a public sector BISE (the identity of the BISE will not be revealed, to avoid suggesting that it is in some way worse than the others), and compared them with an analysis of the AKU-EB 2007 Biology question papers provided by the AKU-EB itself. Both of these were then compared with the specific learning objectives (SLOs) drawn from table 1 on page 57 of the SSC Biology examination syllabus provided by the AKU-EB on its web site. This comparison is considered legitimate, because although the examination syllabus was produced by AKU-EB itself, it is the result of extensive analysis of the national curriculum by a group of outside experts, of the kind that should be available to all.

The analysis is summarized in tables 3 and 4 below. Table 3 shows the percentage of SLOs and marks allocated in the examinations, divided up by curriculum section. Column 1 gives the name of the section. Column 2 gives the percentage of SLOs in the examination syllabus relating to that section. Column 3 gives the percentage of marks in the AKU-EB 2007 biology papers assessing that section; and column 4 gives the percentage of marks in the public sector BISE model biology papers assessing that section.

Table 3 – Coverage of Curriculum Sections

Section	Syll	AKU	BISE
I – Life and its Origin	4	0	2
II – Organization of Life	7	13	2
III – Biodiversity	13	24	22
IV – Maintenance of Life	18	31	35
V – Development of Organism and Continuity of Life	29	4	11
VI – Genetics and Evolution	16	5	22
VII – Interaction of Organisms and their Environment	12	24	6

Table 4 below shows the percentage of SLOs and examination marks divided up by cognitive level. Column 1 gives the name of the cognitive level. Column 2 gives the percentage of SLOs in the examination syllabus relating to that level. Column 3 gives the percentage of marks in the AKU-EB 2007 biology papers assessing that level; and column 4 gives the percentage of marks in the public sector BISE model biology papers assessing that level.

Table 4 – Coverage of Curriculum Sections

Section	Syll	AKU	BISE
Knowledge	28	31	80
Understanding	49	60	20
Application	23	9	0

Table 3 shows that coverage of the syllabus was somewhat uneven in both sets of papers, at least in relation to number of SLOs. Both sets of papers tended to give more weight to sections 3 and 4 – Biodiversity and Maintenance of Life – than their number of SLOs warranted, and less weight to section 5 – Development of Organism and Continuity of Life. AKU-EB tended to give more weight to sections 2 and 7 – Organization of Life and Interaction of Organisms and their Environment – whereas the BISE paper gave very little weight to these two sections. By contrast, the BISE papers gave substantial weight to section VI – Genetics and Evolution – than the AKU-EB, which gave very little weight to this section.

The major contrast, however, was in the cognitive skills tested. The BISE model papers give 80% of their marks to testing knowledge, and 20% to testing understanding, compared with 28% of the SLOs being knowledge objectives, and 49% being understanding objectives. Application, which is not tested at all in the BISE models, has 23% of the SLOs. By contrast, the AKU-EB papers are much closer to the balance of SLOs. They give much more weight to testing understanding; and the relatively low

weight given to testing application is understandable at this stage in the introduction of the new approach.

Thus, there is relatively little to choose between the two sets of papers in their ostensible curriculum coverage; but there is a major difference in the distribution of the cognitive skills tested – and the AKU-EB paper is much closer to the intention of the syllabus (and, by implication, the curriculum). This is an educationally very important difference, and one that the public sector BISEs need to work on finding ways to eliminate – although it is acknowledged that this cannot be done overnight.

However, there are other ways in which the BISE model papers encouraged question-spotting and memorization of textbook content, which were not found in the AKU-EB papers. For example, within a section, the questions were not always well distributed across topics and sub-topics. In the BISE Biology question paper analyzed, of the five long-answer questions, two of which were based on one chapter of the textbook. Also, the language of the question did not always reflect the actual cognitive demand. Even where a question began with "explain", for example "explain light and dark reactions", the correct answer could usually be extracted directly from the textbook (in this case, chapter 10 of the Punjab biology textbook, beginning on page 147 and ending after the second paragraph on page 148)[4]. The quality of the MCQ item writing similarly leaves much to be desired. Many questions require only trivial information (e.g., the precise number of amino acids essential for human), or have options which clearly signal the correct answer, or are effectively incomprehensible without specific textbook knowledge (e.g., "Who secretes human factor VIII in her milk?" followed by four names). Finally, the custom of allowing extensive choice amongst questions allows students to be selective in their study. The BISE model analyzed contained seventeen MCQ items worth one mark each, thirty-three short answer questions worth two marks each, out of which candidates have to answer twenty-two, and five extended answer questions worth eight marks each, out of which candidates have to answer three. Thus, only seventeen out of eighty-five marks are for questions which must be answered.

None of these problems affect the AKU-EB question papers. Coupled with the very detailed specification documents produced by the AKU-EB, the AKU-EB process of question paper development produces examination papers which are of very high quality. They cover the content of the curriculum, and in particular the cognitive objectives, in a systematic way.

Practical Testing

At the first meeting in 2007 of the Inter-Provincial Committee of Ministers of Education the practical examination was made mandatory, and its weight was reduced from 25% to 15% of the total subject marks. The standard procedure for conducting practical examinations in Pakistan encourages schools to concentrate practical activity into a week at the end of the session. It is emphasizes rote memorization, and is open to unfair means such as copying of practical journals. Practicals are commonly seen mainly as a way of

[4] The AKU-EB defines "explain" as: "To reason or use some reference to theory, depending on the context".

giving students bonus marks (hence the reduction in the weight given to them). The AKU-EB has designed a very innovative style of practical examination, exploiting the computer-based examination management system and associated digital printing facility. Candidates demonstrate their practical skills in batches of five. Each of the five candidates simultaneously performs a different pre-assigned task from a set of 12 which are notified to the school in advance so that the laboratory can be prepared. However, it is only when the candidate enters the laboratory that the envelope containing the personalized task instructions is opened by the supervisor. The candidate records the results of the practical task in a personalized answer booklet which is returned to the board to verify the on-the-spot judgments of the supervisor.

Teachers reported that this approach to practical testing had a dramatic positive impact on the teaching-learning process, because for the first time all students and teachers have to take the practical assignment seriously. The teachers felt that more time should be given between practicals for preparation of chemicals and apparatus. However, they felt particularly positive about the AKU-EB practical examinations because they were trusted to carry out the practicals for their own children.

If applied nationally, this approach to assessing practical skills would have major implications for the quality of science teaching in Pakistan – and also for the laboratory facilities required in schools. For the immediate future, therefore, this is inevitably a somewhat elite procedure. The public sector BISEs could not organize such an examination procedure, given the present state of their technology – although even if they did, there is room for doubt about how many government schools would have the laboratory facilities to support such a practical examination.

AKU-EB, however, has plans to go even further, and introduce an element of continuous assessment by teachers. This will take time to implement as AKU-EB will have to develop science investigations to go along with the manipulative/ observational activities listed by the Curriculum Wing in its science syllabuses for Grades IX and X.

Setting/Maintaining Standards

There is almost no information available to the public about the relative standards set by the different BISEs, how they set standards, or maintain them from year to year. Results are published as raw scores (massaged a little by the application of "grace marks" when required), divided into bands (A+, A, B, C etc.). The need to parallel the pubic sector BISEs' reporting of results constrains the AKU-EB in its approach to standard setting. However, the AKU-EB has used its technological capacity to establish a system of mark scheme validation, using the IRT analysis of the pretests of the MCQ sections to set the standard to which performance on CRQ sections can be related.

MCQ item difficulties are established on the basis of the pretest (which is also used for item selection). The MCQ papers are analyzed, and IRT abilities computed for each candidate. For each of classes IX and X, a reference group is then selected, covering the whole achievement range. Two senior examiners then score the reference sets independently (working question by question, rather than candidate by candidate), and

subsequently confer to modify the mark scheme, if too few candidates are being awarded full marks, and to remove any discrepancy in awards between the markers. When there is an agreed set of marks for all candidates/questions, this becomes the mean ability associated with how each score point is computed, which then becomes the standard against which the performance of each marker is compared. A marker who deviates significantly (statistically) from this standard will initially be counseled, and may eventually be terminated.

Like the public sector BISEs, the AKU-EB makes use of "grace marks". Unlike the public sector BISEs, however, the AKU-EB takes account of the intercorrelation of subjects in monitoring standards, and applies grace marks at the A1/A borderline as well as at E/U, and takes account of the effect on the subject totals for each candidate in determining the grace marks to be awarded.

Thanks to a combination of high statistical expertise and electronic examination processing, the AKU-EB is able to achieve far greater precision in both the calibration of the mark scheme and the monitoring of its application than is possible in any public sector BISE. At this point in time, the AKU-EB has not been operating long enough for consistency of standards to be an issue; but the system adopted allows a far more consistent standard to be set from year to year than is possible in any public sector BISE. This system is therefore likely to yield major quality benefits in the long term.

Support for Teaching and Learning

The AKU-EB Mission statement clearly states in its educational objectives that AKU EB will "train teachers and develop supplementary learning materials in support of the National Curriculum for secondary and higher education."[5] This broad commitment has been embodied in the AKU-EB's comprehensive strategy for developing teachers.

Needs Analysis

In order to inform planning, a needs analysis was carried out, which showed that since the examinations are based on testing the higher order thinking skills, teachers who are products of traditional teaching need extensive training and support to prepare students for AKU-EB.

Training strategy:

On the basis of the needs analysis, AKU-EB developed its training strategy. In addition to specific training for individuals involved in the examination, namely Board staff and invigilators, the training strategy of AKU has three main elements: whole school orientation, to help schools with the paradigm shift required by the teachers and students in preparing for AKU-EB examinations; training for teachers in developing materials which support preparing students for examination, to enable them to develop new strategies for lesson planning, materials development and classroom interaction; and training to support teachers' involvement in the overall process of examination, as a

[5] Mission statement, Background on AKU EB

means of deepening their understanding of, and commitment to, both their students and the integrity of the process of examination.

- **Whole School Orientation**: Teachers from affiliated schools are given orientation to AKU-EB academic policies. A one-day orientation program is conducted by an AKU Training Officer, using a trainer's guide and workshop orientation kit prepared by the AKU-EB, including presentations and material development exercises[6] for teachers and Heads. A total of 68 orientation workshops were held, covering 166 affiliating schools. At least one head teacher per school participated, together with an average of about 27 teachers per school. Full details are given in table H-1 in appendix H.

- **Training in Materials Development:** In order to support the development of materials production capacity, AKU-EB involves teachers from affiliated schools in developing Assessment Units for all subjects. Developing the Units allows the teachers involved to: go through the thinking process which they want to develop in their students; identify gaps between curriculum and textbooks; and develop insight into both materials production and assessment. After quality review by the Manager, Training & Exam Development, the Public Affairs Unit of AKU and by the Director[7], the Assessment Units developed are printed and distributed to affiliated schools.

- The training program in materials development has a duration of three days. Programs were primarily facilitated by subject officers, with consultant support. A total of 33 materials development workshops were held in fifteen subjects, during which 837 participants, of whom 591, or about 71%, were female, produced 98 different assessment units. Full details are given in table H-2 in appendix H below. As detailed in table H-3 in appendix H below, a total of 45,963 copies of assessment units were distributed free during the program period, and 22,587 were distributed against cost.

- Teachers in focus groups reported that they considered the training in writing assessment units to be generally very useful, and felt that it had made them into more reflective and more effective teachers.

- **Training to support participation in the examination process:** The AKU-EB believes strongly that, so long as there is no risk to security, involving teachers in the examination process is very effective both in developing their capacity to teach for the examination, and their understanding and support of examination processes (and hence their buy-in to the system). The AKU-EB therefore involved teachers in: the development of test items; the administration of the practical examination; and e-marking.

    - **Item writing Workshops**: Teachers work on the development of MCQ and CRQ according to the required parameters of AKU-EB, learning on-

[6] JC. Doc1 12/1/2007, JC doc -11, 12/1/2007 (Javed Chowdry)

[7] Quarterly Report USAID Oct - Dec 2007

the-job the techniques of developing MCQs and CRQs, as well as contributing items. As detailed in table H-4 in appendix H, item development workshops were held regularly in nineteen subjects. A total of 42 workshops were held, attended by a total of 912 participants, of whom 633 were female. Participants developed a total of 1856 MCQ items, and 1133 constructed-response questions.

- Teachers in focus groups reported that they found the sessions on item writing particularly useful, and felt they had learned how to write MCQ and CRQ.

    - **Conducting Science Practicals:** As has been noted above, AKU-EB has an innovative approach to assessing practical skills, especially in science, which involves teachers. Teachers were therefore invited to attend a day-long workshop on how to conduct practicals. One series of workshops was conducted in 2006, and a second in 2007. A total of 300 teachers received training.

    - **E-marking:** The innovative e-marking system AKU-EB has introduced effectively makes it impossible for markers to identify the candidates whose work they are marking. AKU-EB has therefore used teachers as markers. E-marking training sessions for 35 chief markers and 164 markers in 16 subjects were organized[8]. In this way, the marking skills developed in marking the examinations are disseminated to teachers in a wide range of schools, thus improving the general quality of marking across affiliated schools.

The AKU-EB Training Program was facilitated by local and foreign facilitators, as well as the AKU-EB team[9].

Key Strengths of AKU Teacher Training Strategy

The team concluded that the AKU-EB training program was well thought out, comprehensive and of good quality. As such, it has the potential to make a major contribution to improving quality in the participating schools.

Participants in the materials development course reported that they developed their pedagogical skills and broadened the range of teaching strategies which they use. In particular, they reported that their ability to reflect analytically on their teaching improved, leading them to introduce changes and improve their skills.

Participants agreed that allowing students to think, question and write on their own is a benefit of this approach and examination style, which in turn is leading to teachers developing confidence in students. The training methodology adopted modeled this desired change in practice through the training setting, thus giving teachers much greater insight into the changes that will be needed in their classrooms. Just as the new pattern of

[8] Quarterly Report April to June 2006

[9] See appendix G, table G-2, for a list of foreign consultant inputs.

examination encourages students to become self-learners and takes them away from rote memorization, so participants saw the AKU-EB training as a stimulus to start learning, and opening books other than the text book. As a result, they said, and librarians met also confirmed, use of reference material from library and the Internet is becoming a greater part of their daily work.

One of the major strengths of the basic methodology of the training program lies in teachers learning from each other; since the training is carried out in clusters, sharing the good practices helps the teachers develop self-confidence and raise their self esteem. This needs to be built on to further strengthen the program. Since the teachers come from variable backgrounds and their capacity is also variable, more training is required for some; but this can to some extent at least be provided through mutual support networks, rather than from the AKU-EB directly. Once that mechanism is established, the AKU-EB training will have taken root in the wider educational community.

Teachers in focus groups reported that they considered the training sessions to be of generally good quality, with a well-planned range of activities and teaching styles, and that the support provided by subject specialists was generally good. They felt that the training should be offered on a continuous basis, and that it should be compulsory for all teachers teaching AKU Board classes. On the other hand, they felt that more supporting material needs to be developed, and more reference material made available, especially in Urdu medium; and that the dates and times for workshops are not always communicated in a timely fashion. They also felt that School Management needs some training, to develop their insight into the changes in classroom practice.

Other Types of Training:

AKU-EB also carried out training programs and workshops which were not part of the main strategy for developing schools and teachers, but focused instead on developing in-house capacity. Seven members of the AKU-EB staff were trained by a Karachi based training company by the name of CATALYST in conducting school inspections; training is also provided for invigilators/supervisors.

Customer Service (1): Procedures for Affiliation of Schools

In common with the private sector BISEs, AKU-EB grants affiliation to schools either as centers, which are able to conduct examinations for their own and other schools' candidates; or as schools, which are able to present candidates for AKU-EB examinations. As with the private sector BISEs, affiliation will initially be granted on a provisional basis, which may become permanent after four years.

Box 3 – AKU-EB's Dealings with Schools

As far as their dealing with the school is concerned they are no match with other boards. One feels very comfortable with these people. They are very reasonable, logical and extremely polite and it goes without saying that they command respect, and my personal liking for them is very obvious. I have never felt any doubt about my choice for this board... I think they are the best people available in this education business.

Principal, Alams School, Mianwali

Although under the AKU-EB's founding

charter issued in 2002, schools under the control of the Federal Government, or schools under the control of a provincial government (with NOC) can affiliate with AKU-EB, this facility has been withdrawn meantime (see below). At present, only non-government schools preparing their candidates for examination through the medium of English or Urdu, in Pakistan or abroad, are permitted to affiliate.

Schools seeking affiliation have to submit an application, pay an inspection fee, and submit to inspection. The conditions for affiliation are laid out simply and clearly in the AKU-EB's WWW site. An affiliated school will normally be required to have sufficiently clean, lighted, ventilated and equipped premises with due provision for the safety adequate sanitary arrangements. There should be a staff room or other communal space, as well as an office with facilities for reproduction of teaching/learning materials, and audio equipment for classroom use. Minimum standards are set for science laboratories and the books and resource materials available in the library or classroom resource area, and for computer facilities in schools offering Computer Science as an option.

Box 4
Pindi board official caught taking bribe
By Our Reporter

Rawalpindi, May 26: A judicial magistrate along with the anti-corruption personnel here on Monday raided the offices of the Board of Intermediate and Secondary Education (BISE) and arrested an assistant secretary while taking bribe from the owner of a private school.

Special Judicial Magistrate Ahmed Masood Janjua accompanied by assistant director anti-corruption Rawalpindi RAB Nawaz Bangash raided the BISE offices on 6th Road and caught assistant secretary (registration) Chaudhury Abdul Rauf taking Rs. 20,000 as bribe from the owner of a private school in Chakwal.

According to an anti-corruption official, Ayub Khan, who runs a private school – Mumtaz Foundation – in his complaint to the anti-corruption department alleged that the Rawalpindi Board had not been issuing roll number slips of the first year students in his school. He alleged that the assistant secretary demanded Rs. 20,000 as bribe to get his work accomplished.

The anti-corruption department gave Mr. Khan some currency notes of different denomination marked with certain symbol and directed him to hand over the notes to the board official. And, when he gave the marked notes to the official, the special magistrate and the anti-corruption personnel arrested the board official.

Affiliated schools must follow the national scheme of studies, and teachers must have relevant qualifications and experience in the subject they teach. The school must also ensure that every teacher has a copy of the relevant syllabus, and designate a full-time member of staff as Examination Officer (EO).

These requirements are much less onerous than the conditions of recognition typically applied to private schools by the public sector BISEs. For example, the Karachi Board of Secondary Education requires every recognized secondary school to maintain, and have available for checking by the Board, a total of twenty-one different registers. But what really differentiated the AKU-EB from the public-sector BISEs in the eyes of school principals and managers was the application of the rules and procedures. In interviews, Directors and principals of private schools generally reported that they felt very satisfied with the transparency and courtesy shown by the AKU-EB officials in their dealings with their schools (see, for example, box 3, for a typical head teacher's view), and contrasted this with the treatment they felt they received from the public-sector BISEs which, they felt, often extorted favors or bribes. In fact, there was just such a case relating to the

Rawalpindi BISE during the evaluation period, which was reported in Dawn on May 27th (see box 4).

Customer Service (2): Supplementary Examinations

Students who are absent, fail or simply want to improve their grades in SSC or HSSC are normally allowed to retake up to two subject papers, in a supplementary examination. This examination is normally conducted in September-October for SSC, and October-November for the HSSC; the results are declared towards the end of the year, or early in January. As a result, the candidates who take supplementary examinations are normally unable to apply for a place in the next stage immediately, but must wait a year.

In 2007, AKU-EB made a radical departure from established BISE practice by conducting its supplementary examination from July 26 to August 4, 2007, soon after announcement of the results of the 2007 composite examination, rather than late in the year, as is customary. On publication of the results of its main examinations, AKU-EB accepted appeals and rechecks till July 13, and registered candidates till July 16 for supplementary examinations which started on July 26, 2007. The last supplementary examination was held on August 2, 2007, and the results were posted on the AKU website at midnight on August 6, 2007.

In Sindh, a direct appeal to the Combined Admission Procedure (CAP) committee of Karachi, led to a change of regulation allowing students to use their improved results in college entry in the current year, instead of having to wait until the following year.

This outcome was a *tour de force*, made possible only by the state-of-the-art computerization at the Board. It was greatly welcomed by both students and teachers in focus group discussions.

Board Technical Capacity

The organizational structure of the AKU-EB differs from that of a typical public sector BISE primarily in that while they are devoted to examination administration, AKU-EB also has a division devoted to test development and training, staffed with a group of twelve subject officers, who have wide-ranging responsibilities in relation to development of examination syllabuses, teaching and training materials, and question papers. There are no comparable staff in a normal BISE organogram; and the subject officers are the key to the AKU-EB's success in applying its philosophy in practice.

The AKU-EB subject officers are experienced teachers, with additional relevant training and experience. They play a key role in the development of examination syllabuses, assessment materials and examination papers:

- **Syllabus Development:** the Subject Officers: help to identify subject panel members; coordinate meetings; act as a resource on matters connected with national curricula; review drafts and Urdu translations; and format the final products.

- **Materials Development:** the Subject Officers: coordinate the process of materials development; identify topics; facilitate development workshops; identify resource persons; recommend reference materials; review materials; and keep records of materials produced.

- **Examination Development:** the Subject Officers: recommend facilitators, item writers, subject examiners and reviewers; develop sample questions; coordinate and facilitate item writing workshops; coordinate piloting and analyze pilot testing results; and assist in preparing feedback reports to schools.

In addition, the Subject Officers are heavily involved in liaison with schools. They carry out inspection visits prior to affiliation, act as trainers, and generally support schools.

Learning Outcomes

It is too soon to say for sure how the establishment of the AKU-EB has affected student learning achievement. Direct comparison of students' performance in the AKU-EB examinations with the performance of previous cohorts from the same schools is not informative, because of the fundamental difference in the examinations. The AKU-EB has not been in operation for long enough to have had a significant impact on student learning achievement. However, the AKU-EB is set up to maintain a standard using IRT; and after some time, it will be possible to make comparisons between Board examinations in different years.

The AKU-EB has compared performance in the 2007 composite examination with the same candidates' performance in the 2006 practice examination. Overall, there was a sizable improvement in performance in 2007. For example, in the 2006 practice examination, there were 1% A-1 grades and 8% A grades. In the 2007 composite examination, the same candidates scored 10% A-1 and 24% A grades. However, it should be noted that some "practice effect" is inevitable – the 2006 practice examination was the first of its kind that the students had attempted, and their performance would improve as a matter of course in subsequent examinations. Also, the 2006 practice examination was by definition "low stakes" – students had little or nothing to gain by doing well in it. It would therefore not be surprising if they worked harder, and achieved better results, in the 2007 composite examination.

PROGRAM CHALLENGES AND OPPORTUNITIES

The AKU-EB, although technically very strong, faced major challenges in the market place from its inception. It faced opposition from BISEs that might lose business to them; from religious conservatives; and in gaining acceptance in the schools.

Political and Religious Opposition to AKU-EB

Before AKU-EB began operating, there was already controversy about curricula due to publication of a report "*The Subtle Subversion, on curricula and state of textbooks in Pakistan 2003*", compiled by A. H. Nayyar and Ahmed Salim, and published by

Sustainable Development Policy Institute (SDPI), an Islamabad-based think tank. The report claimed that:

- the Pakistani curriculum and textbooks encourage students to take part in jihad and martyrdom
- non-Muslim students are forced to read the Qur'an, not in Islamiyat classes, but in Urdu classes; and
- Pakistan's 'ideology' as presented in the textbooks inculcates hatred against Hindus, India etc.

The report urged the government to reform curricula and textbooks.

At about the same time, there was another controversy about removing a Qur'anic verse from the Biology textbook and material about Jihad from other textbooks. In March 2004, a TV debate put then Education Minister Zobeida Jalal on the defensive. Jama'at-e Islami' MNA Farid Paracha added another dimension to the debate on removal of Qur'anic verses on jihad from the Biology textbook by a call-attention notice in the National Assembly on 17th March, in which he claimed that the government effected the changes because of external (i.e., U.S.) pressure. On April 7, MMA (Muttahida-Majlis-e-Amal, a coalition of six fundamentalist parties, including Jama'at-e Islami) announced that it would resist the changes and launch a movement against the "secularization" of society.

By April 2004, the matter of curriculum and instructional materials was highly politicized and any action by AKU-EB, real or imagined, risked arousing comment in the press. The AKU-EB Director was warned by the Education Minister that AKU-EB should follow the national curriculum and scheme of studies.

It is within this context that, beginning in December 2004, Jamaat-i-Islami, a leading light in the MMA, began a campaign against the AKU-EB. Although they had no previous record of criticizing the Cambridge system in the country, they accused the board of wanting to "secularize" the curriculum, and to take over the examination system and boost examination fees, thus making their exams unaffordable to the average student. They also claimed that it is the government's responsibility to administer public examinations.

These accusations have little or no foundation in fact. The Board is required by its Ordinance to "follow the national curriculum and syllabi", and had been warned by the Education Minister to do so. Thus, the Board poses no threat to the curriculum. Furthermore, the AKU-EB ordinance applies only to the private sector and the federal institutions and is completely voluntary. (Education being a provincial subject, the system will apply to state-run schools only if the provinces agree.) If an institution is unwilling to participate in the AKU-EB system it is free to stay away.

The AKU-EB therefore poses no rational threat to Pakistani society; but in the heated atmosphere of the time, the Jamaat-i-Islami campaign seemed plausible. It may well be that it was actually directed at other targets, perhaps the Ismaili community as a whole,

especially in Northern Areas; and certainly the Musharraf government, to which the MMA was opposed (although it was the governing party in NWFP). It is noteworthy that other religious groups, even Sunni groups, did not in general join the MMA in attacking the AKU-EB.

This negative campaign took a turn for the worse when AKES(P) was accused (wholly falsely) of distributing a questionnaire as part of a WHO study on HIV on behalf of Ministry of Health, having questions of cultural sensitivity (sexual habits of students). The AKES(P) is part of Aga Khan Development Network, and so distinct from the AKU-EB (which is part of AK University); but AKU-EB was associated with this questionnaire in the press. "You can conclude from these questions that it is a conspiracy to introduce immoral values in our Islamic society," said Liaqat Baloch, deputy leader of MMA. "The Aga Khan board is working at the behest of the Jews, Hindus and Christians and its mission is to turn (change) our future generations."

There is no doubt that the campaign was shrewdly timed, and (perhaps incidentally) had a significant impact on public attitudes to, or concern about, the AKU-EB – however groundless these concerns might be. AKU-EB responded with press briefings for senior editors, TV programs, participating in the Urdu National Conference and distributing syllabuses. These actions had a positive impact on mainstream newspapers. Furthermore, on the advice of AKU's Public Affairs Department, a new approach was adopted, with strong coverage of public statements of President, Prime Minister, Chief Ministers and Ministers of Education in favor of the AKU-EB, and dialog with editors, reporters and columnist at Lahore and Karachi. This confined the negative campaign to small section of Urdu press.

A full-time public relations officer was appointed, as well as two spokespersons who were deeply involved in teacher training workshops. Public exposure to the AKU-EB syllabuses and the commitment and enthusiasm of AKU-EB affiliated teachers also had a positive impact. As a result the MMA Education Minister in NWFP informed the Provincial Assembly that the Provincial Government decided to strengthen the examination boards to prevent the interference of AKU-EB, but further that they should take the good points of AKU-EB. Negative press comment on AKU-EB almost ceased in the context of harrowing news from the earthquake disaster in late-2005, and the exemplary response of AKU's medical teams.

However, schools have had to continue to struggle with this misconception. Many school principals told the team of their efforts to reassure parents on this score. One school in Abbottabad, Middlesex College London, told the team that the school had had the Islamiyat book reviewed by the religious teachers of the school and only after they had cleared it was the school was affiliated to AKU-EB.

Politico-religious opposition negatively affected the affiliation process, and contributed to the one-year delay in delivering the first SSC examination. However, while this issue may have had a significant impact in the short run, it seems clear that it has been effectively resolved, and will have little or no long term impact.

Affiliation of Public-Sector Schools

The AKU-EB was the first Examination Board to be established in the private sector. The original 2002 Ordinance establishing the AKU-EB allows for the Board to offer examinations not only to "private candidates, non-government schools and their students", but also to "Government schools and their students which are under the control of the Federal Government including Islamabad Capital Territory, Federally Administered Tribal Areas (FATA), Federally Administered Northern Areas (FANA) and Cantonments Areas"; but it left open the terms and conditions of their affiliation. Schools under provincial administration were not mentioned in the Ordinance. Affiliation of government schools was considered fully consistent with the policy of the government to improve the public examinations through Public Private Partnership by introducing an independent examining body as competitor to the public sector bodies. It was envisaged that both public and private schools would be affiliated. In 2004, eight public sector schools from the Federal Capital Islamabad and one from Balochistan applied to AKU.

In 2005, then Punjab Minister of Education Imran Masood asserted his right as Provincial Education Minister to say whether Punjab schools could affiliate with the AKU-EB. This was sparked by distribution of the offensive (and wholly spurious) health-related questionnaires referred to above, alleged to have come from an Aga Khan institution. Federal Education Minister Javed Ashraf Qazi rejected the provincial minister's argument, saying the Aga Khan Board had been given legal cover under the LFO. The Punjab law minister took a different view from Imran Masood and endorsed the federal minister's view that Aga Khan Board had the authority to affiliate schools in the private sector, regardless of the wishes of the province.

The negative political campaign referred to above also contributed to the initial denial to AKU-EB of the right to operate in public sector schools. Ultimately, a provision was added to the Ordinance to the effect that "A government school which is under the control of a provincial government or the government of Azad Jammu and Kashmir (AJK) will require a written authorization (No Objection Certificate) from the relevant government Department of Education in order to affiliate to AKU-EB." At the same time, AKU-EB agreed informally with the Federal Ministry of Education not to affiliate any government school (federal or provincial) or non-registered private school. The small number of public schools of Federal Government and Balochistan that had affiliated were de-affiliated, and AKU-EB returned their affiliation fees as part of understanding with Education Minister that AKU-EB will confine it operation in private sector during first year. The situation has remained unchanged from that day on.

Dual Affiliation

Every public sector Examination Board has its specific geographic jurisdiction within which it has to operate (FBISE is unique in that it operates throughout Pakistan; but its geographical jurisdiction is defined i.e., Federally Administered Areas and Cantonment and Garrison Areas; it does not operate elsewhere in the provinces, nor are the other BISEs allowed to operate within its areas of jurisdiction). No school within the

jurisdiction of one public-sector BISE is allowed to present candidates for the examinations of another.

For example, the Rules for Recognition of Secondary Schools prescribed by the Board of Secondary Education, Karachi, currently state[10]:

"24. No school shall impart education in more than one system of examination in the same premises and no Head of a recognized school shall function preparing candidates for another system of examination. However, a primary school may function as an independent unit in a separate block under a separate Headmaster in the same premises"

"25. That the candidates shall be prepared and sent up to examination conducted by any other University or Board when examination of the same nature is being held by this Board."

Before the establishment of the AKU-EB, this was hardly an issue. It only arose, if at all, in the case of private schools operating the O- and A-level system. It is therefore perhaps not surprising that the founding Ordinance of the AKU-EB did not deal with this issue. However, when the AKU-EB started operating, other boards, including FBISE, appear to have felt threatened by what they undoubtedly perceived as encroachment in their respective areas of operation. Working through the IBCC, they adopted in 2004 a resolution forbidding dual affiliation in any circumstances. On the direction of the Education Minister a sub-committee of the IBCC was established to review the resolution. The sub committee gave the following recommendations.

- "The proposal of the AKU-EB to the effect of dual affiliation for the schools and colleges is not in the national interest and is not agreed to.
- Government Schools and Colleges legally cannot be placed under AKU-EB vis-à-vis affiliation with it, AKU-EB being Private Board.
- AKU-EB will be encouraged/extended help to affiliate schools and colleges conducting O and A level and thereof saving foreign exchange of Pakistan.
- AKU-EB may affiliate any private institute willing to go into its fold.
- AKU-EB being a private Board should tap private students and hold examination for them. Further, AKU-EB should tap preferably establish/set up study centers with library and laboratory facilities in the provincial capitals for the private students to facilitate their preparation for examinations."

In spite of a letter dated 10th March 2008, from the Federal Education Secretary to the Provincial Education Secretaries, written with the approval of the Education Minister, and requesting provincial Education Departments to allow dual affiliation, the matter remains effectively unresolved at the time of writing, and potentially a major problem for the AKU-EB. If the resolution were fully implemented, only schools offering O- and A-

[10] The rulebook in question is not dated, so it is not clear whether or not this rule was adopted as a response to the establishment of the AKU-EB.

level would be able freely to affiliate with AKU-EB; other schools would have to give up their public sector BISE affiliation. Many would be very reluctant to do this; they are finding the AKU-EB examinations unpopular with parents, so it is important for them to be able to offer an alternative. If a parent withdraws a child from the examination year, this often produces a chain effect, due to siblings studying in junior classes also leaving the school.

However, dual affiliation of private schools with AKU-EB does appear to happen, at least informally. For example, some schools affiliated with AKU-EB send their students (taught in the AKU-EB-affiliated school) for examination by a public sector BISE through another branch, informally through another school, or in the last resort as private candidates; and it seems that the BISEs (with the possible exception of Karachi) are currently taking a lenient view.

The Difficulty of AKU-EB Examinations

The question of whether AKU-EB examinations are more difficult than those of the public sector BISEs cannot be answered reliably from any data that would be available to either the team or AKU-EB. Because the AKU-EB is a private board, its customers are self-selected. Because they come from the private sector, the Board's customers will tend to have higher average achievement than the clienteles of the public sector BISEs, which draw about two-thirds of their candidates from the public sector.

The standards of the public sector BISEs vary from place to place and year to year. Coincidentally, the results for most public-sector BISEs in 2007 were lower than usual, because in early January 2007, the IPCEM had mandated that all boards should attempt to reduce the emphasis on rote learning and allocate 60% of marks to understanding and application of knowledge. The Boards complied as best they could but, without associated teacher training, results in both the Federal and Punjab boards came down markedly with failure rates rising from 30% to 50%. By comparison, AKU-EB had a 20% failure rate and 10% high level success at Grade A-1.

However, there is a strong perception that results are worse, which is reinforced by results such as those in table 5 below.

Table 5 – Al-Murtaza School, Karachi: Summary Result of Class X: 2006-07

	BISE Result Overall I-II 2006	**AKU-EB Composite 2007**	**AKU-EB Result Pakistan**
No. of Students	151/153	147	
Class Average %	81.70	73.74	
Breakdown	**Number and %age**	**Number and %age**	**Percentage**
A+ (above 80)	103 (67.76%)	37 (25%)	10.5%
A (70-80)	38 (25.1%)	67 (45.5%)	24.1%
B	10 (6.6%)	33 (22.4%)	25.7%
C	-	6 (4.08%)	15.5%
D	-	-	2.4%
E	-	-	0.0%
Failed	-	4 (2.72%)	21.8%
Total No. of Sts.	151	147	c. 2000
Passed %age	100%	97.27%	78%

There is no way these figures can be said to justify claims that AKU-EB examinations are tougher than those of the public sector BISE (in this case, Karachi BSE). Although the mean is lower, the difference in class average percent between 2006 and 2007 is well within the range of fluctuations within one BISE between years, or between BISEs within a year. Nor do they indicate that the AKU-EB is an "easy" board, because the AKU-EB candidates are so highly selected. However, in a school with such high standards as Al-Murtaza, there is a strong perception that the percentage of students achieving A+ and A grades is much lower. The fact that Al-Murtaza school is in Karachi, and the KBSE had a rather easy examination in 2007, will only serve to reinforce this perception, because in practice the Al-Murtaza students will be competing with students graduating from Karachi BSE, and will suffer in the comparison. A similar school in Lahore or Rawalpindi, where the BISE had a much lower pass rate, would probably not suffer in the same way.

One reason why the AKU-EB examinations might be seen as more difficult than those of the public sector BISEs was pointed out by the AKU-EB Director. The public sector BISEs test essentially rote memorization of textbook content. Little understanding is required, and still less application.

Rote memorization in itself is not a particularly demanding mental ability, so it is generally relatively easy for a candidate to get high marks. But another feature of rote memorization tends to increase high scores even more. Rote memorization works more

or less equally well in all subjects, so there tends to be a high correlation between an individual's scores in different subjects. Thus, it is relatively easy to get high scores across a range of subjects.

The AKU-EB examinations, by contrast, aim to test the skills associated with a specific subject, which are much more subject to variation from individual to individual. This means that the correlations between an individual's subject scores tend to be much lower than of the public sector BISEs. That means that it is much less likely that an individual will get consistently high scores across the whole range of subjects – and therefore, it is more difficult for high achievers to distinguish themselves from their colleagues.

The team did not have sufficient data to put this argument to the test; but it is thoroughly plausible.

The Progression from AKU-EB Examinations

This is another issue that was a real concern to some schools, where the team has only anecdotal evidence, because data can only be collected from individual schools, and in any case is likely to be inconclusive. A significant number of schools reported that their SSC graduates were having difficulty getting admission to government colleges. This is a problem for some types of school but not for others. Government policy is to combine higher secondary, classes XI and XII, with secondary. Many higher-status private schools already have such a higher secondary department. In such a school, the natural progression route is within the same institution, so there is unlikely to be a major progression problem – and it is true that such schools as St. Mary's Academy or Lahore Grammar School did not express concern to the team about low grades or progression to the next stage.

Many lower-status private schools, however, are finding that there is insufficient demand to allow them to establish a higher secondary department. Their SSC graduates are therefore seeking admission to a college – and the NEC shows that after class X there is a major falling-off in the proportion of students in the private sector. Thus, they are predominantly seeking admission to government colleges. It may be that the graduates of those schools, which are also those most likely to have found difficulty in making the transition to the AKU-EB educational model (see below), and therefore not to have done as well as they hoped at SSC. Thus, there may be a real progression problem in a significant minority of the AKU-EB's client base, which is masked by the relative ease of progression in the major elite schools.

Set against that, the early supplementary examinations offered by AKU-EB allowed 114 candidates to turn SSC 'fails' into passes and 31 others to improve their marks in one or two subjects. Those students, at least in Karachi, were able to use their improved results in college entry in the current year, rather than having to wait a year and apply again.

AKU-EB also intervened in the few instances of prejudice against AKU-EB qualifications from anywhere in the country that were reported to the Board, and is following up on college admissions. A helpline was set up to remove any impediment to

access arising from unfamiliarity with AKU-EB in the receiving institutions, and the college destinations of all 2007 AKU-EB SSC certificate holders were monitored.

Fee Levels

The original intention was that AKU-EB examinations should be accessible to all schools. For this reason a graded fee system was established, with schools having a monthly fee of Rs. 800 or less paying Rs. 1530 for the two-year examination, and schools with higher fee levels paying Rs. 3060 (plus a small surcharge for subjects having a practical component). The fee for HSSC is Rs. 2660 per part plus Rs. 400 enrollment fees, a total of Rs. 5760.

By comparison, Lahore BISE charges an enrollment fee of Rs. 400 for either SSC or HSSC, plus Rs. 350 for each part in SSC, and Rs. 450 per part in HSSC, a total of Rs. 900 for SSC, and Rs. 1100 for HSSC. Thus, the AKU-EB fees are much higher than those currently being charged by public boards. However, they are much less than the fee for a comprehensive Cambridge 'O' Level certificate in Pakistan, which is about Rs. 26,000.

The sense of the team's meetings with schools was that the examination fee is considered reasonable by many. Parents of students at high-status public schools have no difficulty in paying full fees. Parents of students in relatively affluent areas, such as the Lahore hinterland, also find the fee affordable. A minority of schools, mostly private schools in remote areas (particularly in NWFP and Balochistan), and Foundation schools catering to the poor, do see the level of the examination fee as a significant disincentive to parents.

THE FINANCIAL SUSTAINABILITY OF THE AKU-EB

The team concluded that the AKU-EB, although technically excellent, has fallen well short of achieving its enrollment targets; and as a result that there is some doubt about its financial sustainability, at least in the medium term.

The Trend in Affiliations and Enrollments

The program description[11] makes what with benefit of hindsight can be seen as an highly optimistic prediction of the total number of candidates that will take the AKU-EB examinations – 7,000 in the first year of operation, rising by the seventh year to 37,000 or approximately 1.5% of all candidates. The relatively disappointing outcome for the first years of program operation is given in table 6 below.

[11] "A Proposal for Establishment of The Examination Board", submitted by the Aga Khan University in March 2003.

Table 6: Yearly Candidate Registration (From AKU-EB)

Certificate	Class	Registration Year		
		2006	2007	2008
SSC	IX	2125	2642	2353
	X		1787	2481
HSSC	XI			385

Progress to Sustainability

The AKU-EB attributes the unfavorable registration position to three main factors:

- the negative campaign briefly described above, which obliged AKU-EB to maintain a low profile, and which has now subsided;
- the prohibition on affiliating government schools, which were included in the original projections; and
- affiliated schools who have not sent their students for examination as they would like to wait and see the result for few years.

AKU-EB has predicted that break-even point (a total 27,692 students taking SSC and HSSC) will be reached in 2014. In order to assess the plausibility of this prediction, the team set out to investigate in depth the pattern of affiliations and candidate registrations, through a combination of desk analysis of affiliation and registration data, plus telephone interviews and face-to-face meetings with school principals. The aim of this was to identify the possible reasons for the shortfall so far, and in particular the reasons why some schools have affiliated but not presented candidates; as well as to predict when or whether the AKU-EB might achieve financial self-sufficiency.

The candidate figures are open to more than one interpretation. On one level, they can be read as suggesting steady growth. Sixty schools presented 1,787 candidates for SSC in 2007; 71 schools presented 2,588 candidates for SSC in 2008. However, it is already clear that there will be a drop in 2009. Only sixty-six schools presented 2,353 candidates for part one of the new two-part SSC examination, meaning that the total number taking SSC in 2009 cannot exceed, and will probably be less than, this number.

Eleven schools are presenting candidates for the HSSC; only one of these is not also presenting candidates for SSC. That is to say, all but one of the schools presenting candidates for HSSC are secondary schools which also have a higher-secondary department. The AKU-EB has not as yet signed up a significant number of intermediate colleges. At the HSSC level, the relatively small size of the private sector may be a considerable handicap to AKU-EB.

It had initially been assumed that all affiliated schools (147 in number at the time) would

send up candidates for the 2007 SSC examination; but in fact, a significant number of schools (65) have completed the affiliation process and paid the fee, but not submitted candidates for examination in either 2007 or 2008. Moreover, a significant number of schools, having presented candidates for one or two years, appear to be giving up the AKU-EB examinations. Of the 60 schools that participated in the first round of SSC examinations in 2007, 23 have no class IX candidates in 2008. Thus, not only are some schools not presenting candidates at all; a significant minority of those who have so far presented candidates appear to be withdrawing.

Meanwhile, 20 schools presented candidates for Class X (composite examination) for the first time in 2008 (of whom 3 have no class IX candidates, so will not have candidates in 2008); 11 others presented candidates for the first time for part one only. Most of these schools were relatively newly-affiliated. However, the number of schools affiliating also appears to be falling – only 11 schools affiliated in 2007, and 2 so far in 2008.

The team therefore contacted a range of the schools affiliated with the AKU-EB in various parts of Pakistan, to find out whether they are sending up candidates for the SSC examination, and if not, why not[12]. Schools that have affiliated but so far chosen not to send up candidates, overwhelmingly gave the reason as parental reluctance. In order to find out what was behind this reluctance, the team elected to follow up the initial tentative finding by discussing the question with focus groups of teachers and school principals; and by selecting Directors and Principals of some schools for in-depth interview. Three school principals/Directors were selected for in-depth interview in Rawalpindi, and three others in and around Lahore.

Interlocutors in focus groups and interviews overwhelmingly said that the troubles experienced earlier in the AKU-EB's development, over whether it was somehow un-Islamic in its approach, or deviating from the national curriculum, were essentially a thing of the past. Although some parents, especially among the less-educated, did still express concerns, the great majority accepted the explanations given in the press, especially when they are repeated by school principals in meetings with parents. All agreed that parents' primary concerns were two – fear of their wards achieving lower scores under the AKU-EB than the regular BISEs; and fears that the AKU-EB certificates would be less acceptable in the market than those of the regular BISEs.

However, the in-depth interviews showed that the problems with AKU-EB were not by any means shared by all schools; the situation varied greatly from school to school. Brief case studies of the schools where in-depth interviews were conducted are given in appendix F. The team concluded that the schools visited could be divided into three very broad categories:

- **Elite schools.** An example of such a school is St. Mary's Academy (see case study 1 in appendix F); but it should not be assumed that these schools are mostly run by foundations or other charitable bodies; Lahore Grammar School, which is a for-profit school, would also have been a good model. These schools present

[12] A brief summary of the responses of the Rawalpindi schools is given as appendix I.

their most able candidates for O- and A-level, and encourage less able candidates, that they do not expect to make the grade in O- and A-level, to present for a national BISE. In general, unlike less powerful schools, they had few problems with the BISE procedures or staff (St. Mary's has permanent Rawalpindi BISE affiliation). Because they present significant numbers of candidates for an international examination, they already have a teaching staff that is accustomed to teaching thinking skills and using additional materials to supplement the textbook; for the most part they already have a teaching program in classes I-VIII that includes thinking skills. Such schools are likely to find that the AKU-EB examinations are much more consistent with their overall approach and program than those of the public sector BISEs. They also have few problems convincing their students' parents of the value of the AKU-EB examinations, because they tend to be relatively educated. They also have relatively few problems with progression to HSSC and beyond, both because they offer HSSC and a large proportion of their students stay in-house, and because their graduates have a good reputation.

- **Middle-class schools with a "progressive" approach.** These schools are perhaps even more diverse than the elite schools. They include foundation schools that charge little or nothing in fees (see, for example, Sanjan Nagar School, case study 2 in appendix F), and also "for profit" schools (such as IVARS school, case study 3 in appendix F). They may well also include upper-middle-class schools such as Al-Murtaza in Karachi. These schools had very different philosophies of education; what they tended to have in common was a philosophy that embraced a model of learning consistent in some way with the AKU-EB's emphasis on thinking skills, and reflected in an approach to teaching which did not depend wholly on the textbook, but required teachers to plan, and develop supplementary materials. Some of these schools (e.g., Sanjan Nagar) achieve remarkable results with underprivileged students; and in general these schools are very satisfied with the AKU-EB approach. In fact, if anything, they feel their results are better than they were before. They also tended to have good relations with their students' parents, and could depend on their trust.

- **Schools with a more conservative approach**. Again, these schools were not necessarily similar in other respects. This group embraced "for profit" schools such as Rawalpindi City School (see case study 4 in appendix F) and foundation schools such as Mubeen School (see case study 5 in appendix F). Since many of these schools were previously getting good results at SSC, for students who were not from advantaged backgrounds, they cannot be seen just as qualification mills. They perform a useful service, to good standards of quality. They are also, in many cases, attracted by something more than AKU-EB's transparency and ease of affiliation. They may genuinely see something in the examination syllabuses and assessment units that they think is important. However, these schools tend to have a program of instruction which follows the textbooks. Their teachers have themselves come up through a system of rote memorization, and find it very difficult to adapt to a new system. Even when they are able to adapt, they find that changing students' attitudes and ways of thinking and working in the course

of two years is an impossible task. The lucky schools either never entered students for the practice examinations, or decided to return to the public sector BISE after seeing the results. The unlucky ones persisted, as in the case of Rawalpindi City School, and in some cases paid a heavy price in terms of lost enrollments.

The picture is therefore not particularly bright, at least in the short term. A lot of schools seem to have had cold feet when they saw the reality of the challenge posed by the AKU-EB question papers, and never sent up any candidates. It is not clear that many of these will present candidates in future. At the same time, a large minority of schools who decided to go ahead in 2007 will have given up by 2009. Although there are still newly-affiliated schools putting up candidates for class IX for the first time in 2008, the flow of affiliating schools appears to have slowed.

The Financial Situation of AKU-EB

AKU-EB has estimated that break-even point will be reached when a total 27,692 students take SSC and HSSC, and that this point can be reached in 2014 based on 231 schools in total presenting an average of 63 students per SSC school and 72 students per HSSC school (for these purposes, each student is counted twice, on the assumption that they will take the examination (and hence pay fees) in both class IX and class X). At present, there is too little information available to allow the team to assess AKU-EB's prediction (although as the discussion above indicates, there is already reason to be cautious about accepting it wholeheartedly).

However, even on AKU-EB's own assumptions, the Board is likely to face a financial hurdle not only in the short but the medium term. In 2007, AKU-EB broke even, due to grant income of $1.67 million from USAID and a contribution of $0.19 million from AKU.

However, the USAID grant is now virtually fully utilized, so examination fees will be the main source of AKU-EB's future income. At present, as table 7 below shows, the AKU-EB is receiving an income from examination fees which covers roughly one-quarter of its costs. Even on AKU-EB's own projections (which some may consider optimistic), the operating deficit will continue to accumulate until at least 2013, by which point it will be of the order of $6 million. The actual figure is likely to be somewhat lower than this, because the AKU was contractually bound to contribute a total of $2.8 million towards the AKU-EB program costs in 2003-08. In fact, due to underspending by AKU-EB, only $1.1 million was actually drawn down, and AKU is therefore contractually bound to contribute a further $1.72 million towards the program costs during 2008, allowing AKU-EB at least to break even again in 2008.

Table 7 – AKU-EB Budget Projections, 2008-2012 ($ million)[13]

	2008	2009	2010	2011	2012	Total
Net Revenue	0.39	0.36	0.69	1.19	1.80	4.43
Operating Expenses	1.66	1.72	1.89	2.15	2.41	9.83
Capital Expenditure	0.06	0.00	0.00	0.02	0.03	0.11
Net Surplus/(Deficit)	(1.33)	(1.36)	(1.20)	(0.98)	(0.64)	(5.51)
Candidates (No.)	6,162	6,850	10,443	15,325	20,032	

The impact that an accumulated operating deficit of this size might have on the operation of the AKU-EB will depend on how it is financed. If the AKU is able to borrow money at low or zero interest, it may be able to carry the deficit indefinitely without major adverse effect on activity. Even in that case, repaying any significant proportion of the accumulated operating deficit would not be possible until total candidate numbers significantly exceed 30,000. However, if AKU-EB is obliged to borrow money in the market, the picture will be somewhat different. At the time of writing, the money market was demanding about 11% interest on T-bonds; AKU-EB would probably have to pay more than the government to borrow money in Pakistani Rupees. If the debt were denominated in US$, interest rates would be much lower; but there would be an exchange rate risk since the AKU-EB's income is in Pakistani Rupees.

The team was not able to investigate the financial situation of the AKU-EB in depth; but a simple linear regression on the above table suggests that the annual fixed cost of operating the AKU-EB, without delivering any examinations, is about $1.34 million.

Income Generation outside the Core Business

The AKU-EB is aware that in the immediate future revenue from candidate fees is unlikely to cover operating costs; and consequently is exploring options for generating additional income outside the core business. These include: participation in the USAID ED-LINKS program; development of university admissions testing; development of e-learning; and selling training services.

1) **ED-LINKS:** The AKU-EB will be fielding 25 Learning Management Officers (LMOs) supported by five full-time and six half-time specialist staff. They will work with teachers and district managers to review standards for classes VI to X, develop teachers' understanding of standards and standards-based assessment, and generate and bank appropriate assessment tasks. From 2009-10 onwards, these tasks will be used in school-based assessment (SBA), and standards will be monitored centrally. AKU-EB will also help to upgrade the facilities of six BISEs, and organize calibration exercises to track evolving public examinations and student competence. The maximum total value of the subcontract will be $4.41 million, out of which AKU-EB will receive a management fee.

2) **University Admissions Testing:** The current university admission measure does

[13] From "*2007 Financial Performance and 2008 Budget*", submitted to AKU-EB Bard Meeting, May 12 2008.

not discriminate well among applicants to highly demanding programs such as medicine. AKU-EB is developing a reasoning test (Verbal, Quant and Science). Initial item writing (650 items) will be complete by March 2009, and the test will be administered on a trial basis in 2009. The scale of the likely market for these tests is not yet known. The Aga Khan institutions are very likely to be customers; but AKU-EB is likely to face competition from NETS in securing the business of public sector institutions.

3) **Development of e-learning:** AKU-EB has developed a proposal to capitalize on the dearth of opportunities for lifelong learning in Pakistan by promoting and supporting on-line learning in Physics, Chemistry and English Language. AKU-EB's SSC and HSSC syllabuses and Assessment Units will be reformulated as web-based independent study materials (e-books) which, through animations and simulations, will improve the quality of students' understanding. Students will be able to access self assessment material from AKU-EB's item bank, and peer group instruction through local learning networks based on the 700 Science laboratories and 400 computer laboratories to be set up under the Ed-Links project (if installation can be made to carry a reciprocal commitment to open the facilities to mature students in the evenings).

4) **Broader Commercialization**: Several possibilities have been mooted for a more commercial role for AKU-EB. AKU-EB has demonstrated capacity in developing test items for SSC and HSSC. This could be built on by providing test items or model papers at various levels. The new 2007 National Textbook Policy will allow AKU-EB to offer its existing assessment units for sale, and develop further student support materials. AKU-EB already has a distribution system to take these products to market. AKU-EB also has demonstrated expertise in building teachers' capacity in the areas of testing & assessment. This could be developed as a fee-earning operation, whereby AKU-EB may provide on-site support and on-going follow-up to private sector schools.

5) However, the evaluation team is of the opinion that the core business of the AKU-EB is, and is likely to remain, delivering examinations and certification at SSC and HSSC levels. Most of the various income-generating options explored by AKU-EB are likely to be useful supplements to that core business rather than major generators of income. The possible exception to this is e-learning, which has the potential to generate a large number of private candidates for AKU-EB SSC examinations. One school in Punjab has already demonstrated this potential; it sent up 46 candidates in 2007, and 214 in 2008, largely on the basis of allowing private candidates to use its laboratory facilities. However, attractive as the e-learning model is, both for the AKU-EB and for national development, vested interests are likely to stand in the way of its growth, unless they are accommodated in some way. The team also felt that it would be difficult to ensure that schools would honor the commitment to open their laboratories to private candidates unless the incentives were attractive, and concerns about accountability to the government for equipment and materials were resolved.

COST-EFFECTIVENESS OF THE PROGRAM

The establishment of AKU-EB has been funded through a USAID grant of US$4.5 million, a cost share from AKU of US$2.8 million and a cost share from program income of US$1.6 million. Table 8 below shows the program financial performance for the period from 1st July 2003 to 31st December 2007, the period of the agreement with USAID.

Table 8 – Program Revenues, 2003-07

	2003 - 2007		Fav. / (Unfav.) Variance	
Description	**Actual**	**Budget**	**Amount**	**%**
USAID Grant	4.44	4.50	0.06	(1)
AKU Contribution[14]	1.22	2.80	1.58	(56)
Total Revenues	**5.66**	**7.30**	**1.64**	**(22)**

Revenues were lower than budgeted, because there was less expenditure than budgeted, and therefore not all of the available resources had to be utilized. The reasons for this are outlined below. However, the proportion of the revenues derived from the USAID grant, at 78%, is significantly higher than the 50.1% budgeted for in the Cooperative Agreement. AKU Contribution to the end of 2007, at $1.03M (see footnote), is currently well below the $2.8M given in the Cooperative Agreement.

The justification for this appears to be in the Budget notes on page A-4 of the Cooperative Agreement, where note 1 indicates that the total cost of this program is estimated through to conducting the first set of SSC exams in 2006 and the first set of HSSC exams in 2008, and is estimated **excluding** the anticipated program income. The apparent intention of the AKU-EB is to use the AKU contribution to cover the anticipated 2008 operating deficit, after the end of the program period. While this may not be strictly in accordance with the apparent intentions of USAID in drafting the cooperative agreement, it is not improper; and the reserved funds will make an important contribution to the financial stability of the AKU-EB in the immediate post-program period, given that revenue from examination fees is so much lower than was projected.

Program revenue is not reported separately by AKU-EB, but is subsumed into the AKU Contribution. This may not be the best approach from a planning perspective. Program income to the end of 2007 appears to have been $0.19M, instead of the $1.6M projected in 2003. Total program revenues were lower than budgeted because the first cycle of examinations was delayed by one year from 2006 to 2007; and also because the number of candidates taking the examination in 2007, at 1787, was much lower than the predicted 7000. Program income for the first quarter of 2008 was reported at $0.31M; but it should

[14] AKU Contribution includes program income (totaling $0.19M) set aside to be utilized in 2008 as per the Cooperative Agreement between the USAID and AKU.

be remembered that the great majority of AKU-EB revenue comes from examination fees, and almost all of these come in the first quarter of the year. AKU-EB is therefore facing a sizable deficit in 2008, which will be covered by the balance of the AKU cost share.

Table 9 below presents a summary of program expenditure for the period 2003-07.

Table 9 – Program Expenditure, 2003-07

	2003 - 2007		Fav. / (Unfav.) Variance	
Description	**Actual**	**Budget**	**Amount**	**%**
Direct Expenditure				
Personnel	1.40	2.72	1.32	48
Fringe Benefits	0.32	0.82	0.50	61
Travel	0.12	0.07	(0.04)	(58)
Equipment	0.72	0.88	0.15	17
Supplies	0.07	0.04	(0.03)	(88)
Other	1.33	1.94	0.61	32
Total Direct Expenditure	**3.95**	**6.46**	**2.51**	**39**
Indirect Costs	1.52	0.84	(0.68)	(81)
Total Direct and Indirect Expenditure	**5.47**	**7.30**	**1.83**	**25**

Personnel costs were $1.32M or 48% lower than budgeted, and Fringe Benefits were $0.5M or 61% lower, due to challenges and delay in recruitment of staff, and the deferment of the SSC Examination by one year. There was an unexplained overrun in indirect costs which, at $0.68M, were 81% higher than budgeted.

USAID's financial contribution to the Cooperative Agreement included funds for eighteen trips to Pakistan (and return to origin) by consultants, and twenty-seven trips from Pakistan to an unknown destination. There were fourteen trips to Pakistan by consultants during the program period, and nine overseas professional development trips from Pakistan, as shown in tables G-1 and G-2 below. However, the travel budget was exceeded, due to the need to make frequent trips to Dubai in connection with security printing.

The budgeted amount for USAID's financial contribution also includes an amount of $28,000 in training allowances (direct payments to trainees). It was not possible to assess in detail how this funding was used.

Value for Money

The financial analysis given above is given in as much detail as was available to the team. The amount of detail given is not sufficient for a full analysis of the AKU-EB's use of funds; but the team is of the opinion that the main text of this report shows conclusively that the AKU-EB has delivered an excellent quality of output and has done

everything it was contracted to do and more – and therefore, that it has given excellent value for money. The AKU-EB system is state-of-the-art in every way, and this was delivered at a very low cost by international standards.

The overall view of the beneficiaries was that the AKU-EB is a very transparent organization with an ethos of good customer service. The team found nobody who suggested any improper conduct on the part of AKU-EB, of the kinds that appear to be prevalent among the public sector BISEs. The quality of the training provided was generally deemed excellent; as was the quality of the examinations delivered.

AKU-EB SUPPORT FOR GOVERNMENT POLICY

The AKU-EB as an Example of Public Private Partnership in Education

At the time of independence, Pakistan had a significant private sector in education; but in 1972, GoP extended its nationalization policy to the education sector, and nationalized all private educational institutions. However, in 1979, a government commission reviewed the consequences of nationalization and concluded that the public sector could no longer be the country's sole provider of education; and by the mid-1980s, private educational institutions were again allowed to operate, in compliance with government-recognized standards. This led to a proliferation of private institutions, particularly in the large cities and particularly at elementary level. By 1990, mainstreaming the role of the private sector in education was seen as essential not only to expand access, but to improve the quality of education, not only in the private but also the public sector. A major element in such PPPs was therefore not only to provide education to those who could afford to pay for it, but those who could not; and also to provide a model to improve quality in the public sector.

Policy with respect to the private sector was therefore developed further in the light of the huge investment needed in education, to encourage the involvement of private sector and civil society organizations in financing, managing and delivering education services. The GoP's role in education was further redefined to be not only a provider and grudging regulator of the private sector, but also a facilitator and financer of private sector initiatives. However, the legacy of mutual distrust between private and public sectors remains.

The National Education Policy (NEP) 1998-2010 recommended a number of measures designed to encourage private investment in education, including tax incentives and matching grants for Education Foundations establishing educational institutions in rural or poor urban areas; but also mechanisms through which the public sector would regulate the private sector, to assure quality. The main GoP vehicle for implementing the NEP 1998-2010 was the Education Sector Reforms (ESR) program 2001-05, aiming to increase access, equity and quality of education. Under ESR, the Federal cabinet approved a package of concessions for private sector educational institutions designed to encourage PPPs, including provision of land on confessional rates, provision of gas and electricity on domestic tariff, exemption of duties on the import of educational materials, etc., linked with regulation of their quality and outputs. Their curricula remain under

Federal supervision, and their fee structure is developed in consultation with the government.

Due to excess demand and the perception of offering higher quality, the private sector has flourished at primary/elementary level; but it has made rather less impact at SSC and (in particular) HSSC level. One significant reason for this is that the government education authorities and in particular BISEs tend to put obstacles in the way of private schools, for example in securing BISE affiliation. Private secondary education is also handicapped by being forced to send up candidates for poor quality national examinations. Those who can afford it aspire to overseas examinations such as the O- and A-level; but the high fees charged for these examinations mean they tends to be offered only by a relatively small number of elite schools (although a great many private schools aspire to offer them).

Thus, ESR set out to reform assessment and examinations for secondary and higher secondary education *via* a PPP, and also to promote the establishment of private examination boards to compete with and stimulate reform of the public sector BISEs. The ESR Action Plan document drew attention to the erosion of the credibility and reliability of the current examinations and of the ability of students who graduate from it, due to the high incidence of cheating and other malpractices, and excessive dependence on rote learning. It proposed structural changes in the conduct and quality of examinations, in order to:

- improve the intellectual abilities of students by assessing higher order abilities such as comprehension, application, analysis and synthesis;
- increase the value of National Qualifications by improving the validity, public acceptance, transparency and fairness of examinations;
- provide feedback for supporting improvement of curriculum, textbooks and the delivery system; and
- provide quality information to enable the standards and value of national certificates to be assessed for global equivalence.

It is in this context that the establishment of AKU-EB was encouraged. AKU-EB was the first private sector examination board to be established, able to offer examination services for both SSC and HSSC in both Urdu and English medium, in Pakistan and abroad. The aim of establishing AKU-EB was twofold:

1) To offer to schools of all kinds, private and public, an examination system that would assess desirable higher-order skills such as understanding and application, at a reasonable price. Schools currently offering O- and A-level would prefer this reasonably-priced alternative, leading to a rapid decline in the number of students taking foreign qualifications. Schools currently teaching thinking skills, and frustrated by the poor quality of the public sector BISE examinations, would also find the AKU-EB examinations attractive. Schools not currently teaching thinking would see an attractive alternative model, and would work to improve

their teaching programs. The AKU-EB would support its examinations by a training program, which would help schools to upgrade their standards.

2) To offer the public sector BISEs an alternative model of good practice from which they could learn, both by example and by getting various kind of direct technical support from the AKU-EB.

In this way, establishing a private sector examination board was seen as benefiting the public sector as well as the private sector. The overall quality of education in public schools would improve; and the quality of the service offered by the public sector BISEs would also improve, creating an overall improvement in national educational quality.

The outcome, at least in the limited period for which the AKU-EB has been in operation, has been more mixed.

Assessing the Impact on Public Schools

In addition to affiliating non-government schools throughout Pakistan and abroad, the AKU-EB's founding ordinance allowed it to affiliate federally controlled public sector educational institutions and in due course possibly expand its services to provincial government schools.

Affiliation of public schools did not take place due the various factors outlined above – the religious/political campaign against AKU-EB and the resistance of the BISEs to allowing dual affiliation. Those Federal Government schools that had applied for affiliation with AKU-EB had to have their affiliation fees returned. In spite of the provision in the ordinance relating to government schools, a sub-committee of IBCC declared affiliation of the government schools with private board illegal. Therefore, the team is unable to assess the possible direct influence of the AKU-EB on public-sector schools; and for the foreseeable future, AKU-EB will only be able to influence public schools through its participation in programs such as ED-LINKS.

Assessing the Impact of AKU-EB on the BISEs

The AKU-EB's founding ordinance also provided for the AKU-EB to be a full member of the IBCC, and the IBCC to be represented in the AKU-EB Board of Directors. The IBCC is the main forum where the BISEs coordinate their activities, resolve Inter-Board issues and formulate recommendations on policy matters, and ensure implementation of approved SSC & HSSC Scheme of Studies and Curricula by BISEs. The IBCC also acts to develop the capacity of examiners, evaluators, supervisors and teachers, and acts as an advisory body of the MoE on examinations, evaluation, curricula and equivalence.

Membership of the IBCC therefore put the AKU-EB in a position to influence the reform process. There is no question that AKU-EB has developed systems, services and products of exceptionally high quality, and fully supportive of national education policy. It seems clear, therefore, that AKU-EB has potential lessons for the public sector BISEs, although because of the major differences in scale and achievement of their candidate base, it would not be possible to translate those lessons directly or mechanically.

Through the IBCC, the AKU-EB has undoubtedly had an impact on policy. The exact nature and scope of that influence is, however, very difficult to determine. There is a degree of consensus within Pakistani education on the nature of the changes needed; so the fact that AKU-EB has advocated a particular change of implemented it before others, and that change has subsequently taken place on a wider scale, is not necessarily evidence that AKU-EB caused the change.

There are some cases that are reasonably unambiguous. The idea of the composite examination originated with the AKU-EB, and was accepted by government from 2007 in SSC, and 2009 in HSSC. However, the decision was subsequently rescinded due to public pressure and the resistance of the Government of Sindh, and the last SSC composite examination (for regular candidates) is taking place in 2008.

In other cases, the path of development is much harder to determine. It is true that the AKU-EB was in the forefront of implementing changes in the question papers; but it is also true that the ESR 2001-5 Action Plan, as noted above, does in fact provide for the introduction of questions assessing comprehension, application, analysis and synthesis. Furthermore, the AKU-EB is not the only Board that has been working on the introduction of new patterns of examination. In cooperation with Edexcel, the Federal BISE has carried out a program of examination reform concurrently with the establishment of AKU-EB, with very similar goals and outcomes.

This program began with analysis of previous question papers, which showed that: the questions were generally based recall of information from textbooks, and only rarely involved understanding or application; some inappropriate item types were used; and the overall papers were unlikely to discriminate well between good, average and poor students.

The FBISE set out to develop questions and question papers which would promote maximum coverage of curriculum, discourage selective study and rote learning, and promote concept building. Paper setters and subject specialists in main subjects were trained by chief examiners of Edexcel and by national resource persons. This involved eliminating inappropriate question types such as *Fill in the Blanks* and *True/False*, and increasing the proportion of data-based questions. The new model papers contain a mix of MCQ, short-answer and extended answer questions similar to that generally accepted by IBCC members. The new model papers were sent to Edexcel for review, and approved by them.

Along with the new model question papers, guidelines on teaching-learning and assessment-evaluation strategies, instructional objectives for teachers & students; and marking schemes were prepared. These documents were provided to schools and colleges before start of the academic year. Twenty-five teacher-training workshops were throughout Pakistan and abroad, in which 3500 master trainers were trained.

Finally, the pattern of examination introduced by AKU-EB (i.e., 20% for MCQ, 50% for short answer questions, 30% for extended answers) was accepted by the other IBCC members with effect from 2007. The Federal Education Minister also issued a directive

issued in January 2007 that 60% of marks should be awarded for understanding and application of knowledge, with immediate effect. However, the short-term impact in the field was to lower pass rates. Across the Punjab the pass rate in 2007 dropped to 48% and it fell to 52% in the Federal Board. The changes have therefore been rolled back, at least for the short term.

New National Textbook Policy 2007

Potentially the most important change in central government education policy during the program period may be the introduction of the new National Textbook Policy. Previously, under an Act of 1976, the government held a monopoly of textbook development, production and distribution. Books were produced by Provincial Textbook Boards through experts/writers, and approved by the Federal Curriculum Wing. Under the new policy, Provincial Textbook Boards will only develop textbooks in cases where private publishers are unable to do so. Private publishers will be encouraged to develop textbooks based on the national curriculum, and also to develop school reading and learning materials other than textbooks. However, they will still be required to submit their products to the Textbook Boards for approval and certification as "recommended learning materials". Government schools will be required to use materials recommended by the relevant Textbook Board. Private schools are free to purchase and any materials.

Federal and Provincial Governments are required to increase investment in school libraries, teacher resource books and guides, via regular budgets to schools, and support an awareness campaign for enhancement of reading culture, to stimulate interest in buying reading materials and other educational materials. Textbook Boards will make their resource centers available to publishers, arrange capacity building for them, and support marketing of reading and learning materials by displaying a list of recommended school and general reading and learning materials in all schools, and including it in all textbooks.

Although there is considerable scope for provincial textbook boards to undermine the spirit of this reform, it will potentially have significant implications for the examinations. Because specific information may vary from textbook to textbook, it will no longer be acceptable to test memorization of textbook information; to do so might disadvantage those who have studied one textbook rather than another. Therefore, examinations will have to be based on the curriculum, rather than any individual textbook. The experience of AKU-EB, which has applied this approach from its inception, will therefore be of greatly increased value to the other BISEs.

Administrative Reforms

The following reforms regarding examination administration are included in the revised Education Sector Reform Action Plan 2001-2005, published in June 2003[15], in order to make the national examination system more effective, and the qualifications offered more competitive with international education and examination systems, like the American and

[15] Chapter 4 section 4.3 sub-section 4.3.2 (Reforms in Examination System)

British school systems.

The BISEs were enjoined to introduce organizational improvements by;

- strengthening Research Cells to provide feedback for improvement of the system as a whole, to conduct research oriented professional evaluation, and to train teachers, paper setters, examiners and proctors;

- strengthening Paper Setting Cells to develop better variety of questions, question papers in different subjects;

- computerizing examination processes and appointing well-qualified, honest, dedicated and experienced supervisory staff, preferably on a contract basis, to ensure fairness, transparency and validity in the examination results; and

- increasing remuneration for paper setting and marking.

These are clearly very similar to the differences noted above between the organizational structures of the AKU-EB and of the public sector BISEs. The BISEs were also required to introduce qualitative improvements by means of model question papers that would assess students' intellectual abilities, in particular comprehension and application skills, and eliminate the element of selective study by covering the entire curriculum. They were also required to train teachers in the area of testing and evaluation, to promote teaching that is appropriate to the demands of the model questions. Again, the AKU-EB had already taken significant steps along this road.

In the light of the above it seems clear that the AKU-EB was ahead of the public sector BISEs in introducing innovations in both examination process and question papers, and these innovations are both fully consistent with, indeed supportive of, national education reform policy. They are also remarkably similar to those later introduced by the public sector BISEs, but the public sector BISEs showed considerable resistance to learning directly from the AKU-EB.

It is not surprising therefore that the lessons of the AKU-EB were fully learned by the public sector BISEs. Perhaps a more pertinent question to ask is whether, as a result of its membership of the IBCC, AKU-EB was able to influence the measures taken by the public sector BISEs, and what were the obstacles that limited its influence.

Membership of AKU-EB in IBCC

AKU-EB membership of the IBCC provided an opportunity for sharing experiences in both directions. It was the first time that a private sector body has had an opportunity to participate in a government decision making process which is of such crucial importance to private sector schools. It was clear from our discussions with school managers and teachers that the private schools feel that the public sector BISEs often treat them shabbily. Although it has not yet done a great deal in that direction, the AKU-EB is in a unique position to be a strong advocate on behalf of the private schools, although it has not yet fully embraced their concerns as its own.

The AKU-EB also demonstrates (at least in the eyes of the evaluation team) a high level of expertise and innovation, and is therefore a potential resource for public sector BISEs seeking to develop their systems and products. As can be seen from the discussion above, the team felt that up to this point, the public sector BISEs have not taken full advantage of the opportunity this presented, and have indeed been somewhat resistant, preferring for example to contract with Edexcel for consulting services rather than approach AKU-EB, which would surely be a more cost-effective partner. However, that is perhaps inevitable in the early stages of what is after all a unique relationship, where the AKU-EB has perhaps not fully established its technical strength in the eyes of the public sector BISE Chairmen. As AKU-EB continues to demonstrate its capacity, and also its non-threatening character, this resistance is likely to diminish steadily.

Strengthening the AKU-EB as an Model of Public Private Partnership

At present, the PPP model is struggling in Pakistan, due to mistrust between public and private sectors (which may well be mutual), and the unequal power relations which inevitably exist where private sector organizations (in this case, schools) are dependent on public sector bodies such as BISEs to act as gatekeepers, in the absence of a strong regulatory framework to ensure that the gatekeepers do not abuse their power. There is also a lack of an agreed model for PPPs which provides clear benefits to the private sector partners, through such measures as sponsorship for private schools, facilitating private schools to flourish and provide quality education, and promoting private-sector involvement in policy making and planning.

The mistrust that continues to exist between public and private sectors will be reduced by the continuation of AKU-EB's full membership in the IBCC, especially if AKU-EB comes to be seen as a resource for the public sector BISEs. AKU-EB's role as a mentor to private sector schools is likely to be established by its participation in the USAID ED-LINKS program under which it will provide training to the teachers of the government schools in 25 districts, as well as the staff of six selected public sector BISEs.

Neither of these could be called major breakthroughs; but it is important to remember the context. The mere existence of the AKU-EB as a private sector BISE sitting as a full member of the otherwise public sector IBCC is in itself remarkable; and it is perhaps too soon to make a judgment of its success.

RECOMMENDATIONS

The AKU-EB has set and maintained exceptionally high technical standards in relation to technical work, systems and examination papers.

The examination management system, and especially the e-marking component of it, is a major achievement, which needs to be prepared for wider use (this is currently under way), and made available as widely as possible. Pricing is likely to be an issue – the product is potentially very valuable, and AKU-EB needs the money; but many potential beneficiaries in developing countries will be unable to afford what it is worth. It is recommended that USAID use its leverage to push for a low price, or a two-tier pricing system to allow developing countries to purchase the system.

The production and distribution of feedback reports to schools is without precedent in Pakistan, and needs to be continued and supported by guidance on their use from AKU-EB. It is recommended that AKU-EB hold a short series of workshops to help disseminate good practice in using the feedback reports and preparing action plans for school improvement (for example, the day-long workshop on this topic held by St Mary's Academy Rawalpindi). As other BISEs introduce ICT in their operations, they are encouraged to consider the AKU-EB model, and how they can apply the lessons to their own relations with schools.

The development and distribution of examination syllabuses is fundamental to making the shift from a textbook-based to an SLO-based approach such as that implied in the NEP. The analysis of SLOs in terms of the abilities tested is also essential. It also has potential for increasing the standardization of examinations across BISEs. The IBCC is recommended to promote the development of national or provincial examination syllabuses taking into account the AKU-EB example.

The AKU-EB process for setting question papers achieves consistently higher quality than is possible in the more security-oriented systems of the public-sector BISEs. The public-sector BISEs are encouraged to explore ways of achieving higher question paper quality within their admittedly more pressured environment.

The AKU-EB approach to practical testing has the potential to greatly improve the teaching of science in Pakistan. The public sector BISEs are recommended to develop their approach to practical testing, to converge with that of the AKU-EB.

The public sector BISEs report results as raw scores, with the addition of "grace marks" at the pass-fail boundary when the pass rate is considered too low. The pass mark is essentially arbitrary – it does not relate to curriculum coverage, skills tested or ability to benefit from the next stage of education. The standard varies from BISE to BISE and year to year; if one subject is unusually difficult, it alone will tend to determine the pass rate. The Pakistani system of examination would be greatly improved by the setting of a standard which is more curriculum- or objectives-referenced, and stable across BISEs, years and subjects. The IBCC is recommended to explore different approaches to standard setting and reporting, to this end.

Decentralization of Support Systems

Many schools have difficulty in gathering sufficient reference material and other materials to support flexible use of textbooks. Other schools have been more successful – for example, Habib Public school has compiled and developed reference material from a number of sources for teachers, as have Lahore Grammar School and IVARS school – have developed banks of resources. These could be a resource for other schools. AKU-EB is recommended to consider acting as a clearinghouse for materials developed by AKU-EB schools.

There is a strong demand from schools for a textbook that incorporates the AKU-EB materials. The team is doubtful about whether this is desirable. The team is concerned

that incorporating all the materials required for an AKU-EB course in a single textbook may militate against teachers' lesson planning.

A number of schools, especially in and around Lahore, felt that the AKU-EB system was too much concentrated in and around Karachi, and that this sometimes made communication slow or difficult. Operating conditions in Sindh are acknowledged to be particularly difficult. The AKU-EB is recommended to give more attention to Punjab, where the numbers are larger, and the operating context appeared to the team to be more propitious. As an essential element in this, AKU-EB is recommended to establish at least one branch office, in Lahore.

Training

The AKU-EB training program has had excellent results. With regard to the growing number of schools who have successful experience with the AKU-EB, the team recommends a change in approach towards supporting more decentralized training:

- Local resource persons can be selected and deployed, offering them trainer-training if required, and paying them to carry out AKU-EB training locally.

- Schools which have their own training and Professional Development Centers can be utilized for training – for example, Kashmir Education Foundation in Rawalpindi, Al-Murtaza School in Karachi, Lahore Grammar School in Lahore.

- Local and school-based training can be supported by uploading a much wider range of material to the AKU-EB web site. This should include model question papers, assessment units and training materials (trainer's and participant's) as well as the examination syllabuses.

- Mentor support, which at present does not exist in AKU EB, can help the development of subject specific teaching skills within the schools.

- One or more internet chatrooms for teachers in AKU-EB affiliated schools would be a useful forum to discuss matters related to AKU-EB examinations.

While it may seem attractive to charge for access to what is after all an excellent program, the team feared that this may be counter-productive when candidate registrations are not growing. Access may however be limited to schools that have paid their affiliation fee.

Broader Professional Development

Schools without experience of O- and A-Level teaching appear to need more training than has been provided so far. The relatively large number of schools that are unwilling to present candidates, or who have decided to give up presenting candidates, need something more than the existing AKU-EB training – a structured long-term program in standards-led pedagogy that will enable them to introduce the required reforms from Class VI onwards, so that teachers are able to develop their skills in the relatively less

threatening environment of classes VI-VIII; and when the students enter class IX, they will be prepared for the AKU-EB scheme of study.

The AKU-EB examination pattern requires in-depth study of the syllabus, which demands planning the delivery of content in the given time. Teachers need guidance and support in Long, Medium and Short term planning of syllabuses keeping the individual needs of schools. This implies a multi-year program of support similar to that being offered by ED-LINKS to public schools in selected districts. The problem is to find a way to deliver it to the private sector. USAID is recommended to explore options for offering private schools affiliated to the AKU-EB a program similar to that offered under ED-LINKS to public schools. This would help them to introduce in classes VI-VIII a teaching approach based on specific learning objectives, teaching understanding and application, developing lesson plans and using resource materials other than a single textbook.

Staff Deployment and Staff Development

As is generally acknowledged, there is in Pakistan a dearth of skills among educational measurement professionals. The team is of the opinion that more attention needs to be given to succession planning, and associated staff professional development. For example, the team notes (see table G-1 in appendix G) that the only overseas travel undertaken by AKU-EB staff during the program period (apart from trips to the security printer in Dubai) were trips to present papers at international conferences, and short orientation visits to Commonwealth examining and accreditation bodies. The team recommends that consideration be given to sending selected key staff for more extended training (for example, the courses offered by Cambridge Examinations), and/or extended attachments (up to three months' duration) to Commonwealth examination and/or accreditation bodies.

The Subject Officers are the backbone of the AKU-EB system. They have a major role in developing examination syllabuses and training materials, recruiting and training item writers, materials writers and examination officers, reviewing and revising items, developing question papers, and supervising marking. In addition, Subject Officers carry out pre-affiliation inspections, and generally support schools. The team is concerned that the subject officers may become too thinly spread, and AKU-EB is recommended to review the Subject Officers' workload, to ensure that they have enough time for their examination-related duties.

The AKU-EB Business Model

Based on interactions with schools, the team is skeptical about AKU-EB's projections for the future growth in the core business. The AKU-EB is recommended to review its marketing strategy. It is clear that far more middle-class schools than had been anticipated find the AKU-EB examinations too challenging at this stage; AKU-EB therefore needs to focus on growing its core business first and foremost, while at the same time seeking ways to expand its market. It seems clear that the AKU-EB's core business is for the foreseeable future likely to be providing examinations to elite schools,

and schools which aspire to be elite. Such schools tend to find the AKU-EB approach more consistent with the O- and A-level work than those of the public-sector BISEs. Their students are also relatively likely to pay full fees.

The AKU-EB is recommended to actively court these elite schools – establish close relationships with them; make them more aware of the advantages of AKU-EB examinations; and offer them help in deciding on the value of affiliating. It may be helped in this by developing case studies about best practices and success stories of different schools, and sharing them with all current and possible affiliated schools.

The AKU-EB is also recommended to explore the possibility of establishing strategic alliances with the main providers of O- and A-level examinations in Pakistan. The purpose of this strategic alliance would be to present schools with a complete package – O- and A-level for their more affluent and able students; AKU-EB SSC and HSSC for their less wealthy or able students. This might allow schools to identify sources of synergy in teaching materials and pedagogical approach.

Outside this elite group, AKU-EB needs to give more attention to ensuring that a given school is ready to present candidates, before allowing it to do so. It should of course try to identify schools that are ready to present candidates, and encourage them to do so. A school that is equipped professionally to cope with the demands of the AKU-EB syllabuses will already have an emphasis on lesson planning, supplementary materials and thinking skills. The pool of such schools is by no means exhausted; case study 6 (Annex F) gives an example of a school with a strong commitment to learning, backed up in the primary level by teacher training offered by the same Foundation. However, it is not presenting candidates for the AKU-EB examinations; and before it can do so it needs support to reassure parents, and help with establishing appropriate training for its teachers. As such, it could be an ideal project for the AKU-EB. Many of such schools will not present full-fee candidates so will contribute relatively little to the Board's finances; but they will help to raise the overall quality of Pakistani education.

AKU-EB needs to be more proactive in counseling schools that do not have these qualifications, and helping them to prepare themselves, over a five- to ten-year term. This is likely to involve developing a more extensive development and support program than that required by the elite schools, perhaps in collaboration with the IED.

Financial Sustainability

AKU-EB has a mountain to climb, to reach break-even. One option that has been agreed by the AKU-EB Board is to increase fees. Such an increase is not likely to alienate elite schools; but it will not help to win low-fee schools. AKU-EB may want to reconsider whether it is prudent to increase fees at all at a time when registrations are so low – and if so, how to minimize the impact on the less-advantaged schools.

AKU-EB is embarking upon a range of income generating activities to try to cover its operating deficit. The team is concerned that efforts at diversification may in fact distract key staff from core issues, without delivering sufficient revenue to allow AKU-EB to

continue functioning in its present form. Given the current high level of AKU-EB fixed costs there is no realistic possibility of any of the available options for diversification making a major contribution, except possibly for e-learning, which feeds directly into the core business by increasing the numbers taking SSC. AKU-EB therefore may have to choose between being a full-featured BISE (which implies actively developing the core business) and becoming some other kind of organization, perhaps a research and test development unit. The team recommends that AKU-EB focus first and foremost on expanding the core business.

The team is not recommending further direct support from USAID to cover the AKU-EB's running costs. However, USAID is recommended to consider possible avenues for supporting the development of the AKU-EB by strengthening its customer base, for example by supporting examination fees for foundation schools, or training in standards-based education for private schools.

Outreach to the Public Sector

As can be seen from the above recommendations, the AKU-EB is a model from which the public-sector BISEs can learn, and whose procedures they may be able to adapt. As a full member of the IBCC, with a unique position as the only private sector member, the AKU-EB is in a position both to support and influence other members of the organization. However, there is clearly some sensitivity amongst the public sector BISEs about the AKU-EB.

The AKU-EB is recommended to embrace its position as the only representative of the private sector on the IBCC by airing some of the grievances of the private schools, and seek to propose ways to remedy some of them.

The IBCC is recommended to build on the experience of the AKU-EB as a national BISE, by establishing a working group to:

- review from a strategic as well as a technical perspective the innovations introduced by the AKU-EB;
- identify the ways in which they can produce benefits for individuals, the education system and the nation as a whole; and
- propose ways to improve the quality of the Pakistani examination system by achieving similar quality improvements within the more difficult working context of the public sector BISEs.

Nomenclature

The name, AKU-EB, was originally seen as an asset, because the association with AKU denotes quality in education. In practice, however, it has proved to be a handicap, both because there is still evidence of significant prejudice against Ismailis in some quarters, and because it implies a closer association with AKU than is in fact envisaged. If it were possible, the AKU-EB is recommended to consider a more neutral name, such as

"Independent Board" or "Private School Board".

CONCLUSION

The team determined that it was valuable for USAID to support the AKU-EB program. The AKU-EB as a whole offered a remarkable model of innovation, which is indigenous, following the national curriculum, but also potentially internationally competitive, at a relatively very modest fee rate. The AKU-EB examination papers are also of superior technical quality.

The AKU-EB itself demonstrates significant technical advantage comparative to the public sector BISEs, and this advantage can be directly linked to the funding provided by USAID. These sources of this comparative advantage include: the state-of-the-art examination processing system; the system for examination development; the support provided for teaching and learning; and the customer service offered. In particular, the examination processing system is a huge technical advance, and needs to be made more widely available at an affordable price. This technical capacity was built with relatively very modest support from USAID.

The dissemination of examination syllabuses based on the Pakistani national curriculum has had a profound impact on the understanding of curriculum among participating teachers. The teacher training provided by the AKU-EB was very effective in helping participants to apply the AKU-EB philosophy in their lesson planning and teaching. The participants in AKU-EB training workshops reported to the team that the training program has had a significant impact on their teaching methods. The distribution of feedback reports to all participating schools was particularly valuable in allowing schools and teachers to review their performance and identify weak spots.

Those students the team were able to meet with were very much aware of the superiority of the AKU-EB examinations over those of the public sector BISEs, and all preferred the AKU-EB approach; but because of the year's delay in the first round of examinations, it is too soon to say how the program has impacted students' learning achievement.

The AKU-EB is a highly innovative example of a public-private partnership. The aim was to encourage reform in both public sector BISEs and public schools by example, and to give public as well as private schools the opportunity to present candidates for a more educationally constructive examination. The AKU-EB was the first such PPP, and has faced a range of problems, including lack of an established framework for PPPs in education, and mistrust on the part of both BISEs and provincial political players. Its success has been mixed. As noted above, the model is excellent; but many schools find it too demanding. In the event, the AKU-EB was not allowed to affiliate public schools, and the influence on the BISEs was muted due to their resistance.

The AKU-EB program was very closely aligned with the Government of Pakistan's (GoP) education reform measures, especially in the areas of examination and curriculum reform, and it has anticipated key measures such as the new textbook policy, introduction of examination syllabuses, the assessment of understanding and application as well as knowledge, and key organizational improvements in the BISEs themselves. Changes in

the national system have tended to take place after they have been introduced by the AKU-EB; but it is not always clear whether the AKU-EB has prompted the changes, or merely been ahead of the pack.

The financial sustainability of the AKU-EB is in doubt, however. Some schools found the time frame of a two-year examination too short to make the necessary changes, and some teachers definitely struggled with making the required changes in their teaching methods. Students in those schools appear to have done relatively poorly in the examinations; as a result, some parents have withdrawn children from some AKU-EB affiliated schools; and some of those schools have been forced to give up the AKU-EB examinations. What is needed to support these schools is a program to introduce appropriate methods of teaching and learning from the class VI level, just as ED-LINKS is aiming to do for the public sector.

The number of candidates presenting for the examinations is therefore well below what was originally projected; and the team found little sign of an imminent upsurge in numbers. As a result, the AKU-EB is still far from financial sustainability. Efforts at diversification have not so far yielded significant additional income; and the team felt doubtful about whether they ever would. What is needed, therefore, is for the AKU-EB to develop and implement a more focused marketing strategy, targeting key groups, such as elite private schools. This could be supported by donors; but it would be preferable if the support could be directed to the schools, to help pay examination costs (and possibly even scholarships) rather than to the AKU-EB itself, to pay its running costs.

APPENDIX A – POWERPOINT PRESENTATION (SEPARATE ATTACHMENT IN ELECTRONIC SUBMISSION)

APPENDIX B – LIST OF CONTACTS

Aga Khan University Examination Board

AKU-EB Senior Staff

Name	Designation
Dr. Thomas Christie	Director, AKU-EB
Ms. Karima Kara	Associate Director, Conduct of Examinations
Mr. Dawar Shah	Manager, Curriculum and Exams Development
Mr. Nasiruddin Charania	Finance Manager
Mr. Javaid Ali Chaudhary	Manager, Training and Exams Development
Ms. Shagufta Najeeb	Sr. Publication Officer
Mr. Fahad Latifi	Sr. Data Processing Officer

AKU-EB Board Members

Name	Designation
Ms Roshan Barucha	AKU-EB Board Member
Dr. Bernadette Dean	AKU-EB Board Member
Dr. William Doe	AKU-EB Board Member
Dr. Parween Hasan	AKU-EB Board Member
Prof. Murtaza Khan	AKU-EB Board Member
Dr. Camer Vellani	AKU-EB Board Member
Dr. Haroona Jatoi	Special Invitee to AKU-EB Board Meeting
Ms Dhunmai Cowasjee	Appointed to market the AKU-EB

AKU-EB Subject Officers

Name	Designation
Mr. Aftab Khushk	Subject Officer, Pakistan Studies, Civics & Sindhi
Mr. Aslam Sikander	Subject Officer, Chemistry & Physics
Mr. Tauseef Latif	Subject Officer, Ethics, Geography, Geography & History of Pakistan
Mr. Tauseef Latif	Subject Officer, Arts & Model Drawing
Mrs. Narjis Abbas	Subject Officer, Computer Science & Elements of Home Economics
Mr. Nazim Ali Matalvi	Subject Officer, Islamiyat & Urdu
Ms. Rooshi Abedi	Subject Officer, Biology

Mr. Kamran Naqvi	Subject Officer, Economics & Commercial Geography
Mrs. Isbah Mustafa	Subject Officer, English
Mrs. Bushra Javed	Subject Officer, Psychology & Education
Mr. Rahim Daudani	Subject Officer, Principles of Commerce/Accounting

Karachi Boards of Intermediate and Secondary Education

Name	**Designation**
Syed Jawed Iftikhar	Controller of Examinations, KBSE
Prof. Asif Pasha Siddiqui	Secretary, KBSE
Prof. Anwar Ahmed Zai	Chairman, KBIE
Prof. Haider Ali Novien	Secretary, KBIE
Prof. Agha Akbar Mirza	Controller, KBIE
Syed Muhammad Ali	Deputy Controller, KBIE

St. Mary's Academy, Rawalpindi

Name	**Designation**
Mr. Razi Cecil Khan	Librarian
Ms. Sajida Sultana	Teacher - Chemistry
Ms. Syeda Batool Abedi	Teacher, English
Ms. Farrukh Aftab Bikhari	Teacher, Chemistry
Ms. Rashida Saleem	Teacher, English
Ms. Farkhanda Mushtaq	Section Coordinator, Chemistry
Mr. Faisal Ayub	Section Coordinator, Maths
Mr. M. Saleem Ullah	Teacher, Accounting and Economics
Mr. Sohaib Saliq	Teacher, Physics
Mr. Naveed Ahmed	Teacher, Physics
Ms. Rizwana Sadiq	Teacher, Biology
Mr. Imran Khan Durrani	Student, I. Com.
Mr. Yousuf Zia Bhatti	Student, I. Com.
Mr. Fahad Amin	Student, I. Com.
Mr. Shahbaz Gulfam	Student, I. Com.

IISAR School, Karachi

Name	Designation
Ms. Sadia Murad	Secretary
Mrs Lubna Hameed	Head Teacher
Hafiz Abdel Hameed	Coordinator
Salman Abdul Farooqui	System Support
Sarwat Alam	iEARN and YES
Majid Hasan	Exams and Curriculum

Al-Murtaza Schools, Karachi

Name	Designation
Ms. Tasneem Shabbar	Principal
Ms. Fatima Huzefa	Vice-Principal
Ms. Nausheen Mustafa	English Teacher
Ms. Zeenat Raza	Teacher, Computer Science
Ms. Naghma Muzaffar	Teacher, Math and Physics
Ms. Hasina Naz	Teacher, Chemistry
Ms. Zakia Ahsan	Teacher, Pakistan Studies

Principals' Focus Group, Karachi

Name	Designation
Ms. Nargis Alavi	Habib Girls' School
Ms. Nadia Ferozali	Shahwilayat Public School
Ms. Shahana Hussain	Tungsten School
Mr. Mohammed Ahmed	Tungsten School
Mr. Mohammed Amin	AES School for Girls
Mr. M. Faheem Shahid	Karachi Cambridge School
Ms. Azra Agil	Karachi Cambridge School
Mrs Shazia Rashid	Toronto School of Academic Excellence
Ms. Aisha Zaki	Nasra Secondary School, Korangi
Capt. Sultan Shakir	Charterhouse Public School

Teachers' Focus Group, Karachi

Name	Designation
Ms. Ambreen	English Teacher, BVS Parsi High School, Karachi
Mr. Muhammad Laiq	Economics Teacher, Ghulaman-e-Abbas School, Lyari
Mr. Abid	Computer Science Teacher, St. Patrick's School
Mr. Zaib	Mathematics Teacher, City School
Ms Shanila	Chemistry Teacher, Habib Public School - Boys
Mr. Syed	Chemistry Teacher, Shah Wilayat School
Ms Irum	Chemistry Teacher, Charter House Public School
Ms. Fahmina	Chemistry Teacher, Charter House Public School
Ms. Kaneez Zainab	Biology Teacher, Al-Murtaza School
Ms. Huma	Pakistan Studies, NED University
Mr. Amin	Islamiat Teacher,
Ms. Sunita	Ethics Teacher, Mama Parsi School
Mr. Rizwan	Geography Teacher, Premier College
Prof. Sahma Begum	Urdu Teacher, P.E.C.H.S. College for Women
Ms. Jameel Fatima	Urdu Teacher, Habib Public School
Ms. Naila	Geography Teacher, D.A. Colege for Women
Prof. D. R. Umer	Biology Teacher, P.E.C.H.S Ed. Foundation Govt. Col.
Mr. Shaheen Qureshi	Biology Teacher, P.E.C.H.S Ed. Foundation Govt. Col.
Mr. Sardar Ahmed Khan	Mathematics Teacher, Delhi G.B.S.S., Karimabad
Ms. Sunita Kaikhosrowzadah	Ethics Teacher, Mama Parsi Girls Secondary School
Ms. Kameez Zainab	Biology Teacher, Al-Murtaza Senior Boys School

Lahore Focus Group

Name	Role	School
Mrs Tabassum Rana	Principal	Lahore Grammar School
Ms. Farhat Faiz	Urdu Teacher	Lahore Grammar School
Ms. Sumaira Asif	Maths Teacher	Lahore Grammar School
Ms. Saima Mohsin	Fine Arts Teacher	Lahore Grammar School
Ms. Mahnaz Altaf	English Teacher	Lahore Grammar School
Ms. Naeema Yazdani	Computer Teacher	Lahore Grammar School
Ms. Iram Gauher	Chemistry and Biology Teacher	Lahore Grammar School

Ms. Samira Qureshi	General Science Teacher	Lahore Grammar School
Ms. Saher Chaudhry	Food/Nutrition and H.E. Teacher	Lahore Grammar School
Ms. Aliya Azhar	Pakistan Studies Teacher	Lahore Grammar School
Ms. Naseem Rasheed	Coordinator Secondary	Sanjan Nagar PET HS
Mr. Saood-ul-Hassan	Coordinator Higher Secondary	Sanjan Nagar PET HS
Mr. Mohsin Raza	Principal	IVARS HS
Ms. Roomana Khan	Coordinator	La Salle School System
Ms. Shumaila Azam	Head of English	La Salle School System
Ms. Naila Tarannum	Teacher, Pak Studies	Cantonment Inter School System
Mr. Muazzam Ali Sheikh	Director	Mubeen HS
Ms. Uzma Anwar	Teacher	Mubeen HS

Others

Name	**Designation**
Brig. Tariq Mahmood SI(M)	Chief Executive Officer, Kashmir Foundation
Prof. M. Rais Alvi	Registrar, Karachi University
Mr. Nizar Huddani	ICT Consultant to AKU-EB
Ms. Saima Anwer	Consultant, ED-LINKS
Ms. Aylia Abbasi	Principal, Sultan Muhammad Shah School
Ms. Shahnaz Wazir Ali	Exec.Director, Pakistan Centre for Philanthropy
Mr. M. Ramazan Achakzai	Secretary, IBCC
Commodore M. S. Shamshad.	Chairman, Federal BISE
Mr. Tanvir Sabir	Director, Rawalpindi City School

APPENDIX C: LIST OF SITES VISITED AND SCHOOLS INTERVIEWED BY TELEPHONE

Sites Visited

BISEs	Aga Khan University Examination Board
	Karachi Board of Intermediate Education
	Karachi Board of Secondary Education
	Federal Board of Intermediate and Secondary Education
	Inter Board Committee of Chairmen
Schools[16]	Lahore Grammar School, Lahore
	St. Mary's Academy, Rawalpindi
	Al-Murtaza School, Karachi
	IISAR Foundation School, Karachi
Other Institutions	Pakistan Center for Philanthropy

Schools Interviewed by telephone

Location	School
Rawalpindi	**Asif Public School,** 20-C, Satellite Town, Rawalpindi. Tel. 051-4428718, 0300-850723 AFFILIATED.
	Rawalpindi Grammar School. DK 916-917, Dhok Paracha, Rawalpindi. Tel.051-4425418, 0300-5134609. AFFILIATED.
	St.Mary's Academy Tulsa Road, Lalazar, Rawalpindi Cantt. Tel. 051-5518250, 051-5581819 AFFILIATED
	Aisha Lasani Model School Hassan Campus, KRL Road, Rawalpindi . Tel. 051-447124. AFFILIATED
	Toddler's Shine High School, 35- B-I, Satellite Town, Murree Road, Rawalpindi. Tel. 051-4843535 AFFILIATED
	Rawalpindi City High School. AA-1087, Street No.36, Gulshanabad, Rawalpindi. Tel. 051-5551492, 0300 5131075 AFFILIATED
	Shining Star Public School 1696, Street No.22, Allama Iqbal Colony, Rawalpindi Cantt 051-5528740 AFFILIATED
	Al-Ibad High School 13, Sherpao Colony, Committee Chowk, Rawalpindi 051-5500289, 051-5502239, 03335328994 AFFILIATED

[16] most interviews with principals took place at neutral venues

Location	School
Azad Jammu and Kashmir	**Pearl Valley Public School Rawlakot**, Azad Jammu & Kashmir RAWLAKOT. 058710-43249 AFFILIATED
Mianwali	**Tameer-e-Millat School,** Shahrae ILM, Kala Bagh Road, Mianwali , Principal Khawla Niazi, Tel :0459 23321
	Alams High School, (Boys Branch) 4-Civil Lines, Mianwali. Principal Mr Nadeem Tel: 0459-231558, 236628
	Ailyan's Higher Secondary School F/383, City Street, Mianwali. Principal Wajahat Zaidi. Tel: 0459 235752, 235853
Abbottabad	**Pakistan Grammar School,** 104 Habibullah Colony Abbotabad. Principal Ghazala Majeed Usmani Tel: 0992 381310
	Iqra Academy Mansehra Road Kaghan Colony Abbottabad. Principal: Sajida Shah Tel: 0992 381136 /37/38
	Modern School System Campus Middlesex College London, Opposite Ayub Medical Complex Mansehra Road. Principal Nigar Khan, Examination Controller Mr Asif Tel 0992 384575
Faisalabad	**Umul Madaris Model School** , Gulberg A Faisalabad Principal Mr Shoaib Tel: 041 2631162
Sargodha	**Islamic Ideal High School**, Farooqa Tehsil Sahiwal District Sargodha. Principal, Tel 0486 788081

APPENDIX D – INTERVIEW/FOCUS GROUP PROTOCOLS

Questions for School Principals, Managers and Owners

- **Background**
    - Is your school a secondary school only, or do you have higher secondary?
    - Do you send up candidates for O- or A-level?
    - Did you send up candidates for the 2007 AKU-EB examination?
    - Did you send up candidates for the 2008 AKU-EB examination?
    - Will you send up candidates for the AKU-EB examinations in 2009 and beyond?
    - If not, why not?
- **Affiliation:**
    - How much did you know about the AKU-EB before you went for affiliation?
    - Did you get affiliation at the first attempt?
    - Did you have to make any changes in your school(s) to get affiliation? If so, what kind of changes?
    - Do you expect to renew your affiliation?
- **Presentations**
    - Do you actually present candidates for the AKU-EB examinations? If not, why not?
    - Do you anticipate presenting more or less candidates for AKU-EB examinations in the future? What are your reasons?
    - If you do present candidates, do you present candidates for more than one board or system? If so:
        - Which other Board or system do you present for?
        - What percentage of candidates do you present for AKU-EB examinations?
        - Is this percentage increasing or decreasing?
        - How do you decide which students to present for which examination?
    - In general, what problems do you face in presenting candidates?
    - Have you lost any students due to your affiliation with the AKU-EB

- Have you had any problems with getting dual affiliation?
- If the Government required you to affiliate with only one board, which one would you go for?

- **Response of Parents**
  - Have you discussed with parents the question of which examination system the school(s) should work for? If so:
    - What did you do?
    - What was their reaction?
    - What were their concerns?
    - How did you present your AKU-EB to the parents?
    - Did you meet any resistance to converting to the AKU-EB examinations? If so, why?

- **Support from the AKU-EB**
  - What support did you get from the AKU-EB in introducing the AKU-EB examinations?
  - How efficient are the AKU-EB in supporting delivery of examinations?
  - Are there ways in which the Aga Khan Board could better support schools?

- **Teachers**
  - Did you get any teacher training from the AKU-EB?
  - What kind of training was provided?
  - Was it sufficient? Was it of good quality?
  - What was the response of teachers?
  - How have your teachers responded to the challenge of the new examinations?
  - What specific difficulties or challenges have your teachers faced?

- **Cost of the AKU-EB examinations**
  - What do you think of the cost per student?
  - What do your students' parents think of the cost of the AKU-EB examinations?
  - Have you list any students due to the cost of the AKU-EB examinations?

- Does the AKU-EB system impose extra costs on your school(s)? If so, what are these? How do you feel about them?

- **Expectations**
  - What were you expecting to gain from affiliation with the AKU-EB?
  - Were your expectations met?
- **Results**
  - Were your results from the AKU-EB higher or lower than in previous years?
  - Can you document this?
  - How do you use the examination feedback report you receive from AKU-EB?
- **Strengths and weaknesses of AKU-EB system**
- On the basis of your experience:
  - What do you think are the greatest strengths of the AKU-EB system?
  - What do you think are the greatest weaknesses of the AKU-EB system?
  - What do you see as the challenges faced by the AKU-EB?
  - How could the AKU-EB support you (for those who do send candidates) or convince you to send up candidates?

Questions for Teachers

- **Training**
  - How many teachers in the school received training?
  - How much training did they (you) receive?
  - If you participated in training:
    - Do you feel you had sufficient training? If not, what more do you think you needed?
    - Do you feel the training was of good quality?
    - What were the strong points of the training?
    - How could the training have been improved?
  - What was done to involve or inform teachers who did not receive training?
- **Teaching Process**

- In what ways does the teaching for the AKU-EB differ from teaching for regular board examinations? Can you give us some examples?
- Have you had to change your teaching methods? If so, how and why?
- What textbook(s) do you use? How do you use the textbook(s)
- Specifically, how do you teach application and thinking skills?

- **Support materials**
  - What help did you receive in planning your programme of teaching and learning? Who helped you?
  - What supporting materials do you have access to? (e.g., curriculum, textbooks, worksheets, reference books)
  - How is the purchase of supplementary materials funded? Is it from school, parents, teachers or some other source?
  - Did you have any trouble getting any materials, or getting sufficient quantities of materials?
- **Response of students and parents**
  - In general, how have the students responded to the changes in the teaching? Are they enthusiastic? Worried?
  - What changes have you seen in the students taking the AKU-EB courses?
  - Do you feel that the AKU-EB approach is equally suitable for all students? Who responds best? Do any students have difficulty making the adjustment?
  - How do their parents respond to the change?
- **Impact on lower grades**
  - Do you feel that the AKU-EB approach requires any changes in the non-examination grades? If so, what?

Questions for Students

- Are you aware of which examination system you are studying?
- Are you aware of any difference between the AKU-EB system and others?
- Do you enjoy the AKU-EB courses more or less than the regular courses?
- Do you prefer the composite examination or the two-part system?

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Performance Monitoring Indicators Framework: AKU Examination Board (electronic copy – n.d.)

Quarterly Reports by AKU-EB to USAID: seventeen reports, an unbroken sequence from the second (Oct-Dec, 2003) up to the eighteenth (Oct-Dec, 2007).

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- Inter Board Committee of Chairmen:

- Determination of Educational Qualifications Equivalence for SSC and HSSC Levels. Islamabad, 2007. downloaded from: http://ibcc.edu.pk/

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Application Form for First Recognition of Secondary Schools. Paper copy, n.d.

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Fees Information (HSSC): http://www.biselahore.com/adm_inter_08_eng.htm

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APPENDIX F – CASE STUDIES OF SCHOOLS

Case Study 1: St. Mary's Academy, Rawalpindi – an example of an early adopter

St. Mary's Academy in Rawalpindi is a high-status church-run school, offering education from prep to class XII. The school has permanent recognition with the Rawalpindi BISE for the conduct of matriculation. It is also registered with Cambridge University International Examinations (CIE) for both O and A Level examinations, and is the first school in Pakistan to be registered as a user of the Cambridge International Primary School curriculum.

The nominal monthly fee level is Rs. 1,700 for classes Prep to Class 8 and Rs1,900 for Class IX & X; but a significant proportion of students pay reduced fees.

In the lower grades, the school offers a good general education, which is internationally comparable. Understanding and thinking are emphasized over rote memorization. In secondary education, there is a divergence. The school presents students for both O- and A-levels, and for the regular BISE examinations. The selection of students for each of these sections is based on a combination of parental choice and the school's evaluation as to the most suitable path for a particular student. Whilst it would be true that there are more high achievers in the O and A Level there are nevertheless a significant number of high achievers in the matriculation section of the school.

Within this framework, it finds the AKU-EB a very welcome alternative to the other BISEs. The AKU-EB is attractive to the school because it follows the national curriculum, but the type of examination question asked emphasizes thinking rather than memorization. The AKU-EB model therefore fits well with the model of teaching at the school and enables it to present students for a national examination which is not rote learning but rather somewhat similar in the thinking required to O- and A-level.

This greatly facilitates the planning of the programme of instruction. For example, previously, the separation of the O-level and Matriculation streams took place at the end of class VII; the school is now exploring the possibility of delaying this until the end of class VIII. The teachers at St. Mary's were mostly able to make the transition to the AKU-EB examinations relatively easily, because many of them had experience of teaching for O- and A-level, and because they work as subject teams rather than as individuals. These teachers found the training offered by the AKU-EB sufficient and of good quality. AKU-EB has also given useful follow-up assistance. In the longer run, phasing out of direct AKU-EB training would not be a problem for St. Mary's school because the school has its own budget for professional development. However, the school would like to see a transition to AKU-EB providing a more cost-effective form of support for teachers, perhaps using videoconferencing and/or internet chatrooms.

Before introducing the AKU-EB examinations, the school went through a consultative process. Meetings were held with parents, at which the shortcomings of the local BISEs were discussed. The advantages of the AKU-EB were outlined, as well as the risks, and the measures the school proposed to take to guard against these risks. Parents were given two weeks to comment or ask questions, after which a decision was made to proceed. The school found the process of affiliation very simple and transparent.

Only two students were withdrawn after the decision was taken to present candidates for AKU-EB, out of approximately eighty in the relevant grade. There has been no noticeable decline in numbers since, at either SSC or HSC level following the move to the AKU-EB examinations. The students do not in

general have a problem with progression to class XI, because they are generally able to stay on at St. Mary's Academy. Promotion from class X to class XI is not automatic, however; some are excluded on the grounds of performance and/or attitude to studies and their general behavior at school. In the current year, the number of students entering class XI from outside the school has approximately balanced the number of those excluded.

In the view of the school principal, the AKU-EB stretches the students more than the public-sector BISE examinations. It is important, in her view, to note that students cannot do the AKU-EB examinations just using the existing board textbooks because the existing textbooks do not support conceptual development, and need to be supplemented with other materials. Supplementary learning materials are a problem even for well-resourced schools – schools have to be willing to invest in materials that may be used only rarely.

Results are monitored carefully. In this respect, the school found the evaluative report issued by AKU-EB very valuable, and used it in an intensive self-evaluation. The school found that it had never had such poor results in mathematics as it did in 2007 (the first year of the AKU-EB examinations). However, after careful analysis, the teachers decided that the reason for the problem might have been the school had moved too far towards teaching thinking and application.

A number of criticisms were raised by teachers in the school, particularly of the first year. There was some delay in delivery of the syllabus for class XI, details of topics and marks distribution, and model papers; the school had difficulty in collecting the books of other boards; some reference materials were not available in the market; availability in the market of some apparatus for practicals was also a problem; the response from AKU on questions was felt to be too slow. In addition, some teachers felt that the syllabus cannot be completed in the given time, and that teachers need training to plan the content in the given time with activities. The English teacher felt that the Poetry questions were difficult for the students. On the whole, however, the management of the school is very pleased with the outcome of the switch to the AKU-EB examinations, and the school has no intention of going back to the local public-sector BISE.

Case Study 2: Sanjan Nagar Public Education Trust (SNPET)

SNPET is a not-for-profit Trust, funded from an endowment, established in 1994. SNPET Girls High School (SNPET-GHS) is an English Medium school registered with the Education Directorate, Government of Punjab. The school provides free education to girls from the low-income segment (maximum household income, Rs. 10,000 per month). Enrolment is selective, on the basis of merit and need.

The program started at elementary level but has now reached class X, and embarked on Senior Secondary. The school has two shifts, with a current enrolment of 337 girls in the morning and 93 girls and boys in the evening shift, and a staff of 28 teachers, a Community Worker and 13 support staff.

SNPET-GHS aims to offer learning experiences that stimulate the minds of students, influenced by Howard Gardner's model of multiple intelligences. It therefore offers a curriculum that encourages thinking and questioning, with a variety of stimuli, from primary level onwards. The school aims to prepare students to international standards, and embraced the AKU-EB model as consistent with its educational philosophy. Standards are generally high. A student from the school achieved First Position in the Punjab Education Foundation Examination, and five teachers received a cash prize of Rs. 10,000 each for their teaching.

Facilities are good. The school library has over ten thousand books, which are issued to both teachers and students. The school also has a fully equipped science laboratory, consistent with the demands of a modern science curriculum. In order to secure registration, the school upgraded its computer lab, adding ten computers for a current total of fifteen.

There was some initial concern amongst parents about the AKU-EB; but the school established parent-teacher committees to discuss the issue; the dialogue was successful, and the school retained the confidence of parents.

In the 2007 examination, the school sent up eight candidates to the AKU-EB, all of whom passed the examination in the first division. Four of the eight got A and A+ grades. SNPET is therefore very satisfied with its results and with the AKU-EB system, and will continue to send up candidates, at both SSC and (eventually) HSSC levels.

Case Study 3: IVARS School

IVARS School is a private school founded in 1984 by a retired army psychologist, who is still the Director. It has around 650 students, about 50-60 per grade. It is a "for-profit" school, in the sense that it depends wholly on fees for its income; but it has a strong emphasis on quality.

The Director exercises academic as well as administrative leadership, and has established an approach which emphasizes developing lesson plans and handouts, with materials from the internet and brought in by students, to supplement the textbooks. The school had its own program of in-house materials development, even before affiliating with AKU-EB. The school found this difficult at first, especially because of the need to change teachers' outlooks; and as a result has established its own in-house professional development program. The school now feels sufficiently confident of its in-house capacity to be able in principle to offer support to other schools if requested.

The school has long been affiliated with Cambridge for O- and A-level, but sends up very few candidates, because of the cost. The school also sends up private candidates for the Lahore BISE. The school Director saw an article about the AKU-EB in the *Dawn*, was interested, and followed it up. Given the professional capacity already in place, the school felt well able to cope with the demands of the AKU-EB system. Because the school is not directly affiliated with Lahore BISE, it is able to avoid issues of dual affiliation. The school therefore successfully follows a "three board" model. Senior staff are in favor of this; the Director would prefer to affiliate exclusively with the AKU-EB, but accepts the necessity to continue to offer students the choice of Board.

The school was proactive in discussing the AKU-EB with parents. The issue of religion was addressed directly, by assuring parents that the AKU-EB examination syllabus is acceptable and consistent with the national curriculum. The parents were also reassured about the ability of students to cope with the examinations, and the currency of certificates. This approach was successful initially because the school and the Director have a good reputation. The school's students achieved results consistent with predictions in the first round of AKU-EB examinations, which turn reinforced parents' trust in the school and the AKU-EB.

The students are currently about evenly divided between the AKU-EB and the Lahore BISE. The school is highly satisfied with the AKU-EB's service and the results achieved, and the Director would for preference affiliate solely with the AKU-EB.

Case Study 4: Rawalpindi City School – a Casualty

Rawalpindi City School is a "typical" private school. It is for-profit, in the sense of being owned and managed by individuals; but not aggressively profit-seeking. The school is located in an inner-city area. The nominal fee level is Rs. 750 per month; but many students pay much less than this – some as little as Rs. 100 per month. The school offers teaching up to class X. The Director has explored the possibility of offering HSC; but there was insufficient demand.

The school was one of the first in the Rawalpindi area to affiliate to the AKU-EB. There was more than one factor leading to this choice.

The transparency and ease of the AKU-EB affiliation process was very attractive. The school was formerly affiliated with the local BISE; but had recurring problems maintaining its affiliation. For example, the school has its own large building with 32 rooms. The local BISE required as a condition of continuing affiliation that there should be a physical separation of boys' and girls' classrooms, which was neither very feasible structurally nor demanded by the parents. By comparison, the AKU-EB affiliation process appeared to the management to be both straightforward and focused on educational essentials.

The AKU-EB examination syllabuses were also very attractive to the school management. They represented the first time teachers in the school had received any guidance as to teaching content apart from the textbook. The examples of skills-based examination questions were similarly attractive.

However, the school found the AKU-EB system unworkable in practice, for two main reasons. The most important reason was that after eight grades of traditional teaching students found it difficult to adapt to skills-based examinations, and were at a significant disadvantage as a result in the AKU-EB system. This problem was greatly exacerbated by the move from the composite to the two-part examination. In effect, students faced challenging new types of question after only two terms of teaching. They therefore found themselves at a major competitive disadvantage by comparison with both students from relatively advantaged schools where skills-based teaching had been much more prevalent and their peers taking the local BISE examinations.

The teachers did their best to respond to the challenge of teaching the new materials, but many were not sufficiently well equipped to meet it. Those who were experienced in the traditional mode of teaching and learning had to make a major adaptation, under considerable pressure of time. They received some training form the AKU-EB, but generally felt that this was not sufficient. They felt they were left without sufficient ongoing support.

The negative campaign mounted against the AKU-EB by certain religious and cultural groups was only a minor factor. Of itself it would not have had much impact, had it not been for the school's problems in introducing the new approach. Similarly, the level of fees was an issue, but not crucial. Had parents been convinced of the value of the AKU-EB examinations, the fees would have been found.

The outcome has been a precipitous decline in number of candidates from the school. Twenty-eight candidates appeared from the school for the first practice examination in 2006. Around

twenty appeared for the 2007 composite examination, and only five appeared for the 2008 composite examination. None of the 65 students in the current class VIII have registered for the AKU-EB examinations.

The overall impact on the school's enrollment has been significant. Before affiliating to AKU-EB, the school had around 550 students in total. Now it has around 275; and the Director only maintains numbers at that level by sending candidates to other centers to take the local BISE examinations.

The Director of the school now feels that the school has no option but to seek affiliation from the local BISE, and give up the AKU-EB examinations. He feels very strongly that if AKU-EB is serious about affiliating schools such as Rawalpindi City School, the Board needs to give much more attention to the needs of such schools. He suggested that AKU-EB should engage in much more extensive consultation with school principals and managers.

Case Study 5: Mubeen School

Mubeen School is situated in a rural area outside Lahore. It is a recently-established school (about 6 years old), supported by a family trust. The school has an ample site, including two playgrounds, well-equipped laboratories, a library, and computers. The fees are low, by private school standards, in the region of Rs. 300-350 per month, out of which the school provides students with stationery. The school caters to middle-class students, many of whom aspire to O-level, but are unable to afford it. It is English-medium, following the Oxford syllabus.

The school originally affiliated with the Lahore BISE; but it switched to the AKU-EB. The school was attracted by the ease of affiliation and the transparency of the AKU-EB system (particularly the e-marking), as well as by a curriculum which was seen as offering many of the advantages of O-level (e.g., introduction of concept learning and listening comprehension) coupled with national content, and at a very attractive price.

However, the school found the AKU-EB system very difficult to apply in practice. In a typical year, around 20-23 students from the school had presented for the Lahore BISE SSC. Seventeen students participated in the AKU-EB practice examination in 2006; but their results were much worse than expected; and only three remained as candidates for the 2007 examination. Parents also expressed concern that the AKU-EB was very liberal and secular, and believed that things had been removed from the syllabus in Islamiyat. The result was that students left the school in significant numbers; rolls were adversely affected from class VI up. The school therefore found it had reluctantly to withdraw from the AKU-EB, and return to the Lahore BISE.

In the view of the Director, the school had greatly underestimated the task of preparing candidates for AKU-EB examinations. Although they were willing, indeed eager, to make the change, teachers who had themselves come through the BISE system, and were accustomed to depending on a single textbook, found it very difficult to adjust to the demands of teaching for the AKU-EB examinations. Relatively high turnover of teachers (often found in rural schools) diluted the impact of the training provided, and that much more training was needed, preferably delivered locally, with follow-up and support. Teachers also found the scope of the examination syllabus rather undefined, and felt they needed more comprehensive definition of the content to be taught. Similarly, students who had not been learning concepts and thinking skills from early childhood could not make the switch in two years, especially under pressure from a high-stakes examination. The change from a composite to a bifurcated pattern of examination greatly exacerbated this problem. The Director also felt that he had received insufficient support from the AKU-EB in introducing the new system to parents, and that much more publicity material is in fact needed, particularly addressing FAQs.

The Director therefore feels that for a school like Mubeen, a gradual transition is required, whereby teachers would be inducted into teaching methods which do not depend wholly on the textbook, and these methods would be applied to introduce concepts into the program of instruction from class I, or even earlier. In that way, students and teachers could be adequately prepared for the transition to the AKU-EB.

Case Study 6: A Foundation Running a School in Azad Kashmir

The Foundation runs a school in Azad Kashmir (AK), for all grades from pre-primary to class XII. Many or most of the students attending the school pay reduced fees on account of low household income. The school concentrates on selecting and educating talented children from disadvantaged backgrounds, presents candidates through the Federal BISE and is consistently amongst the highest-achieving schools of the FBISE.

The school is supplied with well-trained primary teachers by its own training institute, and delivers good quality primary education, where thinking skills are taught; the Chairman said that this was a major reason why the Foundation management found the AKU-EB model of examination especially attractive, not only because it tested more internationally competitive skills, but because it followed on from the approach the Foundation adopted in primary education.

The Foundation's school was the first in AK to affiliate to the AKU-EB. However, a number of local religious parties in AK were opposed to the AKU-EB, on religious grounds; and when the news got out about the school affiliating, there was uproar against the school. This was a concern, but not an insuperable obstacle. The school therefore organized meetings with local parents to discuss the possibility of presenting candidates for the AKU-EB examinations. They put forward the educational reasons for supporting the AKU-EB, and the disadvantages of the public-sector BISEs in this respect. There was however strong resistance from parents to the proposal. Feedback suggested parents were not primarily concerned about the cultural aspect, but about the possible adverse impact on their children's results. It was noted that students tend to get better marks from the Mirpur BISE than the FBISE, and that this tends to give them an advantage in competing for places in higher education. If the AKU-EB marks tended to be lower than those from the FBISE, this would disadvantage the candidates who took AKU-EB examination – and there was no evidence available which would convince parents that AKU-EB results would not in fact be lower.

The school is confident that its students, having been prepared well in the primary grades, could cope with the AKU-EB approach; but the Chairman expressed concern about the capacity of the school's secondary teachers to teach thinking skills. Unlike the primary teachers, the secondary teachers are not trained by the Foundation, and although they are well qualified on paper, are accustomed to teaching the regular SSC approach (i.e., rote memorization) rather than thinking skills. The training offered by the AKU-EB (three teachers trained for three days in Karachi) was not considered sufficient to produce the change in teachers' knowledge, attitudes and practices that would be needed to teach the AKU-EB syllabus effectively. A more substantial and cost-effective training programme is needed. The Chairman expressed interest in working with the AKU-EB on delivering such training through the Foundation's teacher training facility.

The school has a higher-secondary department, and expects to offer places automatically to all class X students who achieve at least a B+ average (generally 100% of students. Therefore, progression from class X to class XI was not an issue.

In summary, although the school is supportive of the AKU-EB philosophy and approach, the management will delay making a firm decision about participating until it is clearer to both management and parents that the students will not suffer; and until a more comprehensive teacher training package is available.

APPENDIX G – INTERNATIONAL TRAVEL AND CONSULTANT INPUTS, 2003-07

Table G-1 – International Travel by AKU-EB Staff, 2003-07

Date	Travelers	Purpose	Destination
Sep. 2005	T. Christie; Saqib Farooq	To attend International Association for Educational Assessment (IAEA) Conference	Nigeria
Mar. 2006	Saqib Farooq	To visit South African Examination Board	South Africa
Mar. 2006	T. Christie; Hina Ashraf; Narjis Abbas	To attend Association of Commonwealth Examination and Accreditation Bodies (ACEAB) Conference and visit assessment institutions in Jamaica	Jamaica
Sep. 2007	T. Christie; Karima Kara; Irfan Qasim	To attend IAEA Conference	Azerbaijan

Table G-2 – International Consultant Visits to AKU-EB, 2003-07

Date	Travelers	Purpose	Itinerary
Feb. 2004	Monsef Farid Punjawani	Workshop on Islamiyat Syllabus	London-Karachi
Jan. 2005	Lucy Jones	To visit South African Examination Board	London-Karachi
Jan. 2005	Mark Zelman	Materials development in mathematics	Moscow-Karachi
Mar. 2005	Andrew Morton	Workshop on Biology and Chemistry	London Karachi
May 2005	Bill Jordan	Security printing consultant	London-Karachi
Sep. 2005	Mark Zelman	Review of Assessment Units	Karachi-Moscow
Oct. 2005	Andrew Morton	Item writing workshops in science	Glasgow-Karachi
Nov. 2005	Lindsay Miller	English Listening Workshop	HK-Karachi
Dec. 2005	Andrew Morton	Item writing workshops in science	Glasgow-Karachi
Jan. 2006	Bill Jordan	Security printing consultant	London-Karachi
May 2006	Iason Lemprianou	Workshop on Assessment	Nicosia-Karachi
Dec. 2006	Andrew Morton	Item writing workshops in science	Glasgow-Karachi
Dec. 2007	Mark Zelman	Construction of accessible maths items	Ukraine-Karachi

APPENDIX H: DATA ABOUT TRAINING ACTIVITIES

Table H-1: Orientation Workshops during Program Period

Location	No. of Wkshps	No. of Participants		
		Schools	Tchrs.	Heads
Karachi	18	57	429	63
Lahore	7	19	163	19
Rawalpindi	3	8	65	8
Gujranwala	1	3	30	3
Hafizabad	1	1	6	1
Sheikupura	1	1	14	1
Sargodha	1	2	21	2
Gilgit	1	3	42	3
Mianwali	2	7	46	7
Chakwal	2	3	29	3
Abbotabad	1	2	30	2
Kot Ishaq	1	1	7	1
Pakpattan	1	2	38	2
Hyderabad	1	2	26	2
Multan	1	1	8	2
DG Khan	1	1	14	1
Bahawalpur	1	2	18	2
Burewala	1	2	8	2
Daherki	1	2	19	2
Sukkur	1	1	12	1
Larkana	1	2	16	2
Faisalabad	1	1	26	2
Jhang	1	1	10	1
Muzzafargarh	1	2	22	2
Okara	1	1	15	1
Thatta	1	1	14	1
Others	15	38	684	36
Total	68	166	1812	172

Table H-2: Materials Development Workshops during Program Period

Subject	No. of Workshops	No. of Participants			Assessment Units Dev'd
		M	F	T	
English	3	32	76	108	13
Urdu	3	22	86	108	7
Islamyat	3	9	75	84	7
Pak. Studies	3	23	55	78	5
Ethics	1	2	3	5	2
Physics	3	21	48	69	6
Chemistry	3	27	63	90	8
Biology	3	19	44	63	6
Mathematics	3	43	65	108	15
Computer Science	2	34	23	57	10
Home Economics	1		6	6	4
Economics	1	4	10	14	4
General Science	2	8	25	33	5
Civics	1	2	7	9	4
Food & Nutrition	1		5	5	2
Total	33	246	591	837	98

Table H-3: Assessment Units Distributed During Program Period

Distributed Free	
Subject	**AUs**
English	2157
Urdu	13342
Islamyat	
Physics	3370
Chemistry	11326
Biology	9865
Mathematics	5167
Computer Sci.	736
General Science	
Total	**45963**

Distributed Against Payment	
Subject	**AUs**
English	3145
Urdu	1342
Islamyat	724
Physics	4913
Chemistry	2373
Biology	536
Mathematics	5383
Computer Sci.	4040
General Science	131
Total	**22587**

Table H-4: Item and Question Writing Workshops during Program Period

Subject	No. of Workshops	No. of Partcpts			Items Dvlpd	
		M	F	T	MCQ	CRQ
English	3	38	82	120	154	93
Urdu	3	43	100	143	153	123
Sindhi Salees	2	5		5	44	20
Islamiyat	3	9	58	67	93	68
Pak. Studies	4	18	40	58	152	94
Ethics	2	3	1	4	52	9
Geog. of Pakistan	2	2	6	8	74	130
Physics	3	26	43	69	103	73
Chemistry	3	25	68	93	168	79
Biology	3	45	93	138	205	57
Mathematics	3	37	58	95	223	103
Computer Science	2	10	22	32	22	92
Home Economics	1		4	4	41	22
Economics	1	6	16	22	136	67
General Science	1	8	14	22	18	28
Commercial Geo.	2	2	4	6	37	16
Civics	2		12	12	86	28
English Literature	1		4	4		8
Hist. of Pakistan	1	2	8	10	95	23
Total	42	279	633	912	1856	1133

APPENDIX I – BRIEF NOTES OF FEEDBACK FROM RAWALPINDI SCHOOLS

Table I-1: Responses of Schools contacted 29 April 2008

AKU-EB Ser. No.	Name	Comment
47	Asif P. S. (Principal Mr. Asif)	Presently affiliated with Rawalpindi Board, got AKU-EB affiliation in 2007, students not enrolled for exam due to parents' reluctance. Positive about the quality of teacher training program.
52	Rawalpindi G. S. (Principal Mrs Naheed Nafees Sidique)	Affiliated in 2003-04; students not enrolled for examination due to parents' reluctance. The teachers attended some training sessions which were judged of high quality.
53	St. Mary's Academy (Principal Sister Eileen Daffy)	Affiliated in 2003-04; sent up candidates for 2007 examination, will continue to send candidates in 2008 and beyond. The teachers attended some training sessions which were judged of high quality.
54	Aisha Lasani Model School	Chose not to respond
96	Toddler's Shine H. S. (Principal Mr Asim Asghar)	Affiliated in 2006; students not enrolled for examinations due to parental reluctance. Teachers had attended some training sessions which were judged of high quality.
116	Rawalpindi City H. S. (Principal Mr. Tanvir Sabir)	Affiliated 2006; students took 2006 practice exam and 2007 composite exam. No students to be presented in future due to parents' reluctance.
135	Shining Star P. S. (Principal Mr Mohammad Tayyab)	Presently affiliated with FBISE. Affiliated with AKU-EB in 2004-05. Students not enrolled for examinations due to parents' reluctance. Teachers had attended some training sessions which were judged of high quality. Principal took responsibility of not seriously advising and educating the parents on AKU-EB. Principal was appreciative of the systematic and well organized approach of AKU-EB.
224	Al-Ibad H. S. (Principal M. Shameem Asghar)	Affiliated in 2007; students will be taking the 2008 SSC exam. No workshops have been conducted for the teachers.
11	Pearl Valley P. S., Rawalakot (AJK)	Affiliated; not presented any candidates yet. May do so in the future.

APPENDIX J – PHOTO: CONDUCTING EXAMINATIONS