

Perceived consequences of syllabus Innovation in the Pakistan Secondary School Certificate Examination

**Aftab Khushk and Thomas Christie
Aga Khan University Examination Board Pakistan**

Introduction

Pakistan is listed among the developing nations of the world. The prevalence of low quality education in the country is one of the major constraints on its development. Minimal use of modern assessment techniques and dependency on traditional learning processes are the significant factor of low quality education in the country.

At the foundation of Pakistan there was a single examinations board, which was responsible for examining students from all over the country. Since then the number of examination boards has gradually increased to 23 in line with growing candidate numbers, while the level of quality education in most institutions has not been improved to satisfy the academic needs of the time.

In response to the present situation the AKU-EB has sought to involve all stakeholders in the design and implementation of syllabuses. In this connection AKU-EB organized three days workshop to derive syllabuses from the National Curriculum to fulfill the academic needs of the country. More than 50 subject specialists reviewed 16 National Curriculum subjects. Participants were requested to share their experiences about the strengths, weakness of the current curriculum and to make suggestions for further improvements.

In addition to this AKU-EB shared the outcomes of its endeavors with teachers from 18 Federal Board colleges which are counted as relatively more advanced institutions as compared to other public institutions of the country. This one day workshop helped AKU-EB to get feedback and involve grass root practioners in the designing phase. This was also an opportunity to evaluate the level of quality of syllabus from various perspectives, especially those of teachers and pupils. This study is based on the responses of the teachers. The major emphasis of the study is to explore the consequences of syllabus of Secondary School Certificate Examination in the eyes of teachers drawn from 18 Federal College Teachers.

Broad Demographic and social patterns

Pakistan has an annual population growth rate of 2.6%. The population is young with 43% aged 14 years and below. About 54% of the population is in the economically productive age group (15 to 60 years). Pakistan is a nation of about 130 million people. About 48 percent are women and about 70% of the entire population lives in rural areas. The rural population lacks access to basic social amenities and constitutes the majority of Pakistan's illiterates. The density of population is about 146 per square kilometer.

The vast majority of the population share a common religion, Islam (Sunni Muslims are in majority). The territory of Pakistan is divided into four provinces, Punjab (56%), Sindh (23%), NWFP (13%), and Balouchistan (5%) along with federally administered areas (3%). Each province has its own local language and cultural traits. Urdu is the official and most commonly spoken language of the country.

Current Status of Education in Pakistan

Table 1

• Average year of schooling of adults	3.9
• Duration of Compulsory Education	5 years
• Duration of education- primary level	5 years
• Education spending by government	2.3%
• Female enrolment share- primary level	35.9%
• Literacy female	29%
• Literacy male	55.3%
• Literacy (Total population)	42.7%
• Private school enrolment- primary level	34.8%
• Private School enrolment- secondary level	22.4%
• Pupils teachers ratio- primary level	44.1%
• Pupils teachers ratio- secondary level	28.3%

(Source World Bank Annual Report 2000)

History of Examinations in Pakistan

In sub-continent the first institution the "Calcutta Madarssah" was established in 1781 for the benefit of Muslim students by the Muslims. The curriculum designed for this institution comprised arithmetic, geometry, Quranic theology, law, logic, grammar and national philosophy. They practiced traditional methods of student assessment; Rote Memorization, Oral, Questioning and Open Forum Discussions for awarding certificates to the candidates.

In 1853 educational activities took a new direction as a result of the Lord Macaulay Report. In these minutes he proposed English as the only medium of instruction and all the money earmarked for education would be spent on English education. In the light of Macaulay report, the British government started to establish missionary schools at *Zilla* (district) and *Tehsil* level. In this newly introduced education system government emphasized the introduction of new subjects and up-to-date techniques of assessing student learning outcomes.

Before independence Bombay University and Punjab University were responsible for conducting examination at secondary level among the areas, which are now part of the Pakistan. At that time subjects offered by universities were divided into two groups' compulsory and elective subjects. The detail of subjects is as following:

Group A: Compulsory Subject

1. English
2. Mathematics or in case of girls, Arithmetic and Domestic arithmetic and Household Account
3. History and Geography

Group B: Elective Subjects

1. Pakistan languages such as Urdu, Punjabi, Pashto, or a foreign language, say, French or German.
2. A classical language Arabic, Persian, Hebrew, Latin, or Greek
3. Physic and chemistry.
4. Drawing.

5. Agriculture
6. Physiology and Hygiene or Civics and Hygiene or Domestic Economy for girls only.

Source: (Bhatti, M.A. 1993)

Little earlier before the independence of Pakistan in April 1947 University of Sindh at Karachi replaced Bombay University and took responsibility of control and regulation of Secondary as well as Higher Secondary Education in province of Sindh (BSE, Karachi, calendar, 1994).

1947 educational conference

In November 1947 a conference was held under the supervision of founder of nation. The major objective of this conference was to revise national curriculum and suggest strategies to enhance access and equity of education in country.

Since than various educational plans have been developed to enhance the quality and quantity education in the country. Chief among them are following :

Punjab University Commission 1950-52.

In the result of this commission suggestions were made to redesign and modify national curriculum. The commission recommended that courses in middle schools should consist of certain basic subjects such as religious education, Physical Instruction, Urdu, Mathematics, History and geography. The Board of Secondary education was established in 1950 to conduct examinations. The Karachi Board held its first examination in 1951 for which 1461 examinees were registered. Before 1952 examination were conducted by the adaptation of curriculum and syllabi designed by Bombay University. The board designed its first curriculum in 1952. Karachi examination Board displayed first ever result on computer in 1986.

Existing Situation of Examination in Country

There are various shortcomings in examination system, which are driving the quality of education towards, unsatisfactory. Prominent among these shortcomings are: emphasis on memorization; subjectivity; poor content coverage and administrative shortcomings

1. Emphasis on memorization:

This practice has overlooked the testing of higher objectives like understanding, and application of knowledge and skills.

2. Subjectivity

a. The subjectivity of a person who is setting question papers
The subjectivity of paper setters play important role in creating heterogeneity regarding developing test items for examination.

b. The subjectivity of examinees in writing answers when mark schemes are undifferentiated and non-specific.
Test items developed for assessing the knowledge of examinee are outdated. The examinees are not enlightened about competencies of the course contents. They are merely exploited to memorize the content. Along with this, no innovations have been made by paper setters to help examinee in exploring his/her knowledge through different type of test items.

c. The subjectivity of a person who evaluates answer books
In public examination the responsibility to evaluate is given to senior subject specialist. Boards generally don't organize training for them. They evaluate answer copies on the basis of their own knowledge and experience.

3. Poor content Coverage

Formerly, ineffective coverage of the content by question paper had become such a common factor that nobody seemed to take any serious view of it. This phenomena unmistakably impairing entire teaching learning process. Heavy reliance on a single textbook is a major factor, reinforcing this situation among schools.

4. Administrative shortcomings

Even when there is excellent paper setting and marking, the value and success of examination can still be spoilt by poor administrative procedures when examination takes place.

Pressure for a new Examination Board Formation

The above mentioned situation of education in the country created anxiety among the masses regarding the future of their children. This disrepute and low credibility of public examination boards can be highlighted through government sponsored reports and studies, such as:

“Unfortunately, large scale cheating and other malpractices have by and large eroded the credibility of public examinations. Neither the annual system of examination, nor the semester system provides a real measure of the achievement of studies.....This situation calls for total rethinking and restructuring of examination system at secondary level, and institution of alternative structure”

(MoE 1994)

The masses along with the reputable institutions of the country are closely questioning the credibility and validity of certificates awarded by public examination boards.

It was badly needed to have an alternate which might cope with this situation. At last in 1995 Some 20 prestigious institutions of the country approached Aga Khan University and ask it to set up a school examination board. The Board of Trustees of AKU commissioned a feasibility study in 1996 for the establishment of first ever private examination board in country. On the recommendations of feasibility study the Aga Khan University Examination Board come into existence in 2003.

Similarities and difference between AKU-EB and the existing Examination Boards

1. Emphasis was given to a number of important factors concerning teachers, teaching and learning specifically the role of teacher as manager of learning and active learning in which children participate freely and actively.
2. The Examination Board initially is going to cater for 16 subjects which include compulsory, science and a few optional subjects. To maintain such professionalism as is available in the schools, subject panelists were required to retain 85-90% of the national curriculum syllabus material.

3. The students will be examined only in the second year of SSC and there will be no exam at class IX level. This is necessitated by the switch towards more constructive learning which both requires more time for the students to adjust to a new style of questioning and more time for the teacher to cover the syllabus in exploratory mode.
4. Currently, the teachers rely on a single textbook. The AKU-EB would ensure that the teachers have a variety of materials to choose from and students have more choices.
5. There would be four major constituencies with which the examination board would seek partnership: private sector, Public system, English medium and Urdu medium schools both in urban and rural areas of Pakistan. It will be a national board. All other boards bar one are provincial or local.

The problem

The study was conducted to investigate the consequences of syllabus innovation in the Pakistan Secondary School Certificate Examination in the eyes of Federal government college teachers.

A one-day seminar was held for heads and teachers of Islamabad Model Colleges to introduce them to the work of AKU Examination Board and seek ways of collaboration. In this connection participants were introduced to the major innovations of AKU-EB.

The sample

Islamabad is the capital city of Pakistan. This place is known as junction where people from all over the Pakistan meet. In government departments people get jobs according to their specific quota of their province. Commonly this city is known as the city of elites. The Majority of inhabitants belong to upper economic class. This category of people generally has great opportunities of civic amenities. The institutions of this city are also generally perceived as best quality education providing institutions as compared to other government institutions of the country.

For this study our respondents belong to the teaching faculty of these institutions. The participants in the workshop were five or six representatives from each college.

Representation closely reflects subject status. Secondary education in Pakistan is dominated by the extremely limited range of career aspirations of the middle classes. Even before the end of compulsory education the pre-engineering and pre-medicine groups, both of which are science combinations differentiated only by the inclusion or non-inclusion of Computer Studies, account for most of the SSC candidate entries. The main other grouping is known as “General” but could more aptly be described as non-science. There were only three participants who taught Islamiyat (Religious Studies), three for Economics and only one for each of Geography, History and Civics. The latter subjects have no recognized utility in Pakistan education.

Table 2. **Subject Specialisms of Participants**

Subject	Male	Female	Total
Biology	4	3	7
Chemistry	4	2	6
Civics	0	1	1
Computer Science	2	3	5
Economics	0	2	2
English	6	4	10
Geography	0	2	2
History	0	1	1
Islamiyat	2	1	3
Mathematics	7	6	13
Pakistan Studies	3	2	5
Physics	3	4	7
Urdu	5	3	7
Total	36	34	70

AKU-EB shared its major current achievement, sixteen subject syllabuses with the participants. The major aim behind this activity was to explore the consequences of this examination syllabus on major stakeholders (Student, Teachers, Parents, and General Public).

Data Analysis

AKU-EB faces the problem of initiating change in a very conservative system and with a poorly trained teaching force. The chosen strategy is therefore evolution not revolution. In each subject, the syllabus development panels have been instructed to make only minor

modifications until new teaching materials can be developed. The target figure for modified or added material was 10-15% so that existing text books would still serve in the newly affiliated schools. To what extent are the subject panels perceived to have met their remit of retaining 85-90% of current material?

Table 3 sets out the overall percentage of familiar material in each subject syllabus where there is a sufficiency of respondents to make comparisons meaningful.

Table 3. Mean percentage familiar syllabus material by subject

	Cases	Mean	Standard Deviation	Standard Error
All subjects	68	80.74	18.89	2.29
Biology	6	77.22	7.43	3.03
Chemistry	6	90.56	3.90	1.59
Physics	7	86.67	7.70	2.91
Computer Studies	5	94.00	4.35	1.94
Mathematics	13	93.08	17.56	4.87
English	10	66.67	21.37	6.76
Urdu	8	67.92	23.57	8.33
Pakistan Studies & Islamyat	8	65.83	15.30	5.41
Economics, History Civics & Geography	5	92.00	9.01	4.03

The overall level of familiarity in Table 3 is on the whole lower than intended but there are very significant differences in the levels of familiarity achieved by the different subject panels (Table 4).

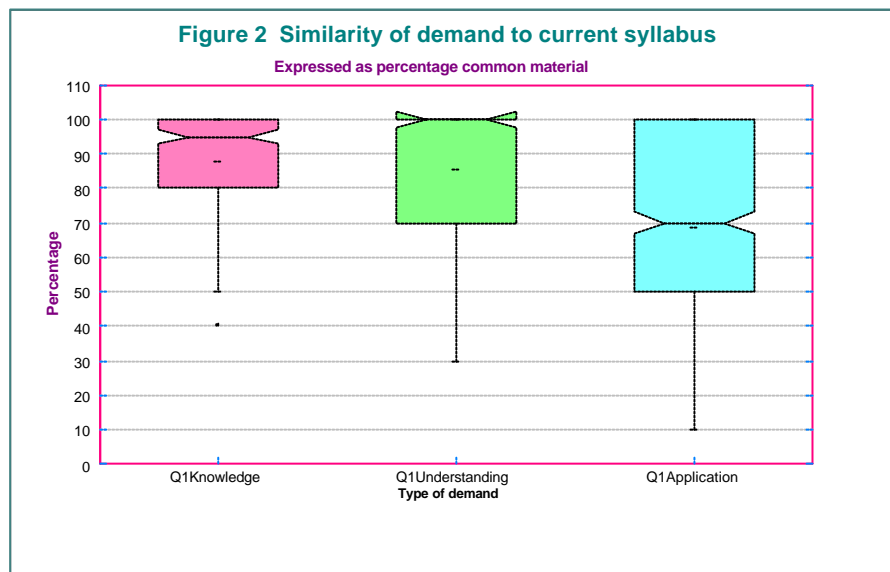
Table 4 Analysis of variance in the mean familiarity of subject syllabuses.

Source	Sum of Squares	DoF	Mean Square	F	Signif
Between subjects	9463.627	8	1182.953	4.83	0.0001
Within subjects	14444.053	59	244.814		
Total	23907.680	67	356.831		

A post hoc comparison of means (Student-Newman-Keuls technique)

reveals two distinct subject groups, the sciences with high familiarity and the emerging arts subjects with low.

Figure 2 indicates the source of the unfamiliarity. Both knowledge (mean = 87.94) and understanding (mean = 85.29) are within the specified range of familiarity. It is the application of knowledge and skills which is seen as the relatively new element (mean = 68.97, $F = 15.75$ with 2, 67 d.f.; $p < .001$)

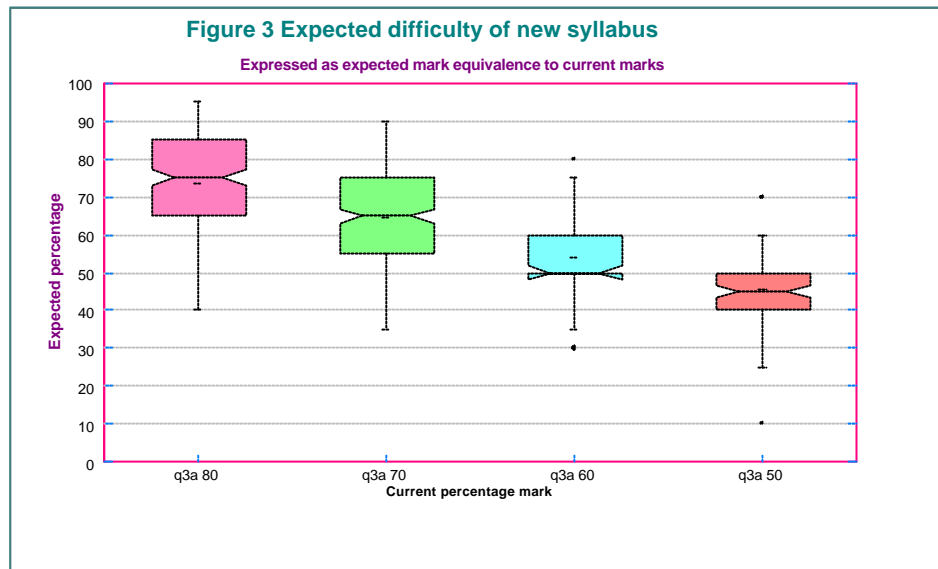


Much of the dissatisfaction with the current examination system is based on an assumed over-reliance on rote learning. The AKU-EB syllabuses categorize each specific objective as knowledge, understanding, application or some combination of the three. Respondents were asked to evaluate each of these dimensions in terms of the percentage of such material that would be familiar to a teacher of the current syllabus. As expected it was straight content knowledge which was most familiar (Figure 2). Application of that knowledge was a far less familiar demand with less than 70% familiarity. There is indeed a problem of emphasis in the current syllabus to be addressed in the longer term.

A major stumbling block to adaptation of the new board and hence its syllabuses lies in perceived difficulty. The private education system in Pakistan is more concerned with examination success than subject understanding. Any move which threaten success rates is to be avoided. Participants were asked how difficult the new syllabus would be using both Angoff and Nedelsky techniques. Figure 3 shows the

expected average rank in the new syllabuses associated with the grade cut-offs in the current syllabuses. Throughout the range the average expected drop is about 5 percentage points.

Figure 3 Expected difficulty of new syllabus

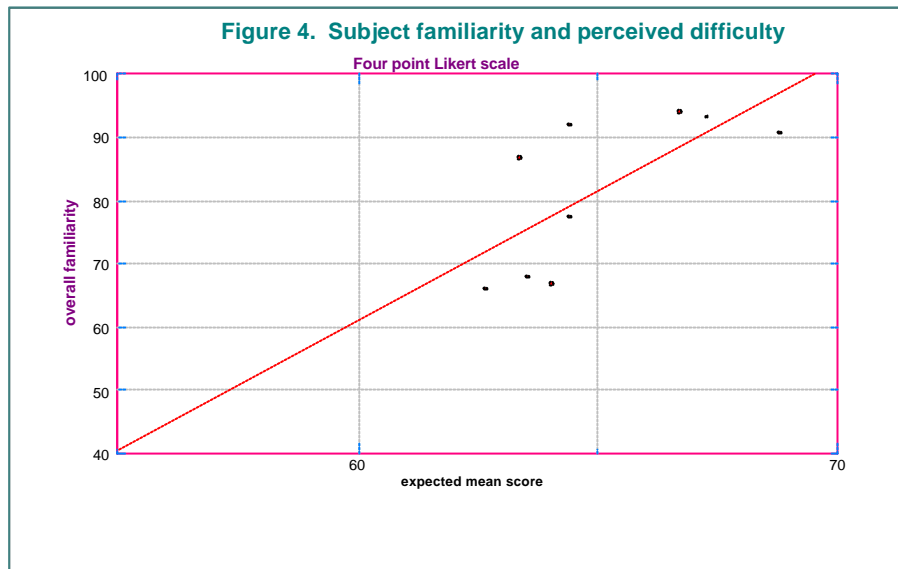


Respondents were also asked to estimate how many candidates would fall in each of the grade internals were given an initial rectangular distribution in the current grades. These estimates were transformed to expected mean scores by subject. Figure 4 shows a strong relationship between the mean expected score and the percentage of familiar material in the new syllabuses. The correlations at the individual respondent level are reported in Table 5 and are much lower but still positive except where knowledge is involved.

Table 5. Correlations between syllabus familiarity and expected mean score (n=67)

	Mean	s.d.	Correlations			
Familiarity			Kn	Un	Ap	Tot
Knowledge	87.9	16.0	*	0.88	0.61	0.88
Understanding	85.3	19.9	0.88	*	0.72	0.94
Application	69.0	26.8	0.61	0.72	*	0.90
Total subject	80.7	18.9	0.88	0.94	0.90	*
mean facility	65.1	4.0	0.17	0.25	0.29	0.27

Figure 4 Subject familiarity and perceived difficulty

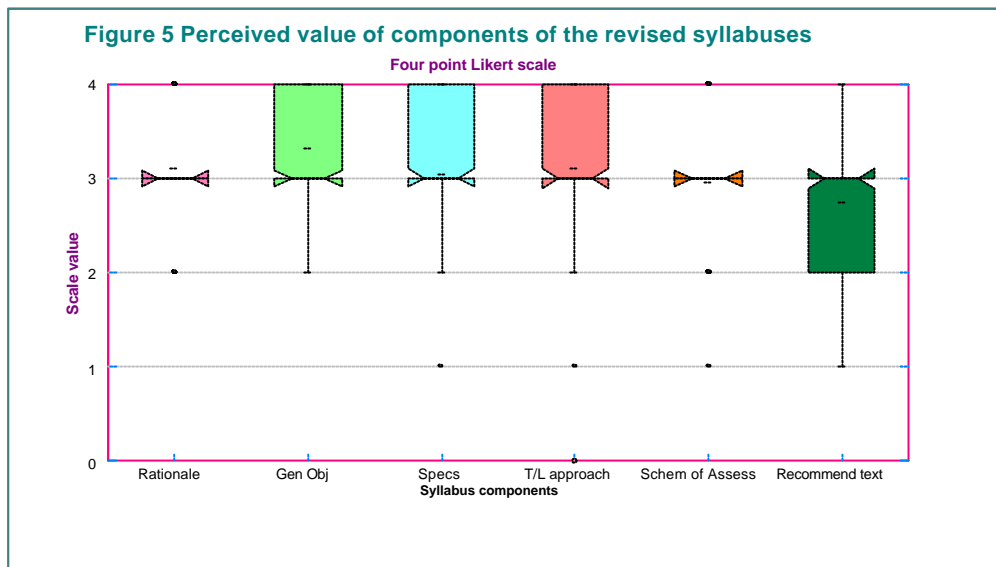


In summary syllabus change is seen as a threat to standards of reported examination performance. Unfortunately it is results, rather than the education reflected in the results which are the main focus of attention.

To explore this separation of importance respondents were asked to rate each component of the syllabus statement on a four point scale in terms of its value as a guide to subject mastery. The results are reported in Figure 5.

Most of the teachers had never seen a syllabus. The existing boards are extremely remiss in making them available and in any case they are explicitly addressed to text book writers rather than teachers. All the teacher normally sees is the text book. It may be the sheer novelty of seeing an examination syllabus that led to the very strong welcome for every component of the syllabus statement. There is however one less welcome feature in Figure 5, the section dealing with textual support materials. At the moment teachers deal with a single text which is rarely modified even if inaccurate. All of the syllabuses recommend a main text for student purchase and then some ancillary texts which the schools should purchase as the very minimum of library material. This is not a popular move.

Figure 5 Perceived value of each component of the revised syllabus



There is much rhetoric today about the information age and the necessity of generic skills, especially study skills, as the foundation of lifelong learning. Pakistani teachers however show little evidence of having taken these new imperatives to heart. Rather they reflect the more world weary view of Jean-Jacques Rousseau.

“Men will always prefer a worse way of knowing to a better way of learning.”

Conclusions

- The emphasis on a single textbook per subject per year during the course of study in Pakistan is one of the most important reasons for shortfalls in the quality of teachers and the efficacy of educational output..
- Assessment of learning outcomes needs special expertise. It is needed to enhance the capacity of learners to learn but is seen as a threat to examination success.
- There should be strong collaboration between designers and teachers during syllabus reform but if there is to be innovation syllabus formulation cannot be left to teachers alone.

- Suggestions shared by subject panelist should keenly be incorporated in designing teachers training and impacts of support should continuously be monitored by board officials.

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