

For discussion on 12 September 2005

Legislative Council Panel on Education

**Review of the incident involving
misreporting of 2005 HKCEE English Language (Syllabus B) Oral paper results**

Purpose

This paper informs Members about the incident involving misreporting of results of the 2005 Hong Kong Certificate of Education Examination (“HKCEE”) English Language (Syllabus B) Oral paper and the actions taken by the Hong Kong Examinations and Assessment Authority (“HKEAA”).

Background

2. HKEAA is an independent statutory body established in May 1977 under the HKEAA Ordinance (Cap. 261). Its statutory responsibility is to plan and conduct the HKCEE and the Hong Kong Advanced Level Examination (“HKALE”). It operates on a self-financing basis, and is governed by a 17-member Council whose members are drawn from tertiary institutions, schools, business and other sectors, and government officials.

3. The Government is represented on the HKEAA Council and most of its committees; and approves HKEAA’s annual programme of activities and estimates of income and expenditure (including proposed examination fees). HKEAA also submits its audited statement of accounts together with a report on its activities to the Legislative Council annually.

The incident

4. HKCEE results were released on 10 August 2005. On 11 August 2005, when investigating an appeal case, HKEAA discovered an error in the result of the

Oral paper of a candidate taking English Language (Syllabus B). It was found that the grading of 670 candidates had been affected, out of a total of around 79,400 candidates who sat this examination.

The remedial actions

5. HKEAA immediately carried out the following remedial actions -

- (a) Recalculated the English Language (Syllabus B) results of all affected candidates and printed new results notices for these candidates on 11 August.
- (b) Conducted a full system check immediately after the discovery of the error on 11 August and confirmed on 12 August that this was a localised incident and that there were no further processing errors.
- (c) Notified the affected candidates by phone the same evening or the following day and sent new results notices to their schools (for day school candidates) or homes (for private candidates), or kept the new results notices at HKEAA office for the candidates to pick up, as the individual candidate preferred, on 12 August.
- (d) Held a press conference on 12 August to apologise to the candidates and the public, to explain the incident, and to announce remedial actions.
- (e) Held a special Council meeting on 15 August, followed by another press conference to update the public on the situation and announce further remedial actions, as set out from (f) to (h).
- (f) Appointed two Council members, one from each of the school and non-school sectors to supervise the rechecking of results of the English Language (Syllabus B) Oral paper for all 2005 HKCEE candidates who sat the examination. This exercise checked for both processing errors and any data preparation errors in the established rechecking process.
- (g) Extended the deadline by 3 days for normal applications for rechecking marks and lifted the restriction on the number of subjects that a candidate can nominate for rechecking.

- (h) Established an independent Review Panel to investigate into the cause of the incident and make recommendations on improvement measures. The Review Panel, which reported directly to the Chairman of the HKEAA Council, comprised two senior IT personnel of tertiary institutions, including Mr Victor Cheng (the Director of Information Technology Services, Hong Kong Institute of Education) who chaired the Information Systems and Services Review Committee set up in March 2005 to review the IT infrastructure and systems of HKEAA, and was therefore well placed to review the incident.
- (i) Held a special Council meeting on 30 August to consider the two reports on the rechecking of results and the review, as mentioned in (f) and (h); and held a press conference on the same day to present the key findings and recommendations.
- (j) Established at its special Council meeting on 30 August, an Investigation Committee composed of two Council members and an external observer to investigate the assignment of responsibility. The committee will complete the report for the Council's consideration by mid September.

6. HKEAA has communicated and worked closely with the Education and Manpower Bureau (“EMB”) to minimise the impact of the incident on candidates. While HKEAA was executing the remedial actions, the Secretary for Education and Manpower publicly assured the affected students that none of them would be disadvantaged in the ‘secondary six’ admission process. EMB carried out the following remedial actions:

- (a) On 12 August, a task force and hotline were set up to assist the affected candidates. The hotline answered more than 2,800 enquiries during the 6.5 days of operation.
- (b) The task force contacted all the affected candidates who had met the secondary six admission requirements. Of these, 17 sought EMB's assistance. With the support of the concerned schools, all of the affected candidates were offered an appropriate arrangement, such as returning to their own schools or switching to another school for further studies.

The findings from the process of rechecking results of the Oral paper of English Language (Syllabus B)

7. The report of the Council members who supervised the rechecking exercise confirmed that only the 670 candidates as previously reported were affected by processing errors and no new cases were found. The rechecking identified 16 cases in which a change in results was necessary due to data preparation errors including markers' transcription or summation errors or incorrect use of forms. Of these 16 cases, one resulted in an upgrading of the candidate's subject grade, but the candidate concerned has already secured a sixth form place in his/her own school and the change did not affect his/her 'best six' score.

The findings of the Review Panel

8. The new HKCEE computer system was first implemented commencing in September 2004, and most program modules had undergone appropriate tests by January 2005. The report of the Review Panel confirmed that the error was caused by a programme bug that had been identified and fixed in July, but the debugged programme had not been applied to correct the results of the Oral paper of English Language (Syllabus B). The report concluded the two direct causes of the incident were a programme bug and an operational fault. The flowchart showing the process of how the error has occurred is set out in Annex A.

9. The report also identified the indirect cause of the error as being a failure of quality control and weak incident management. The following four key steps in managing the incident were missing:

- Authorisation before updating production data
- Verification after production data is updated
- Documentation and audit trails
- Reporting to management and review

10. The report also concluded that the overnight checking from 11 to 12 August to verify the results of the papers affected by the programme bug were adequate.

Improvement measures

HKEAA's initiative in identifying priority areas for improvement and making recommendations

11. In support of the Education Reform and new educational initiatives, and to keep pace with increasing demand and expectations from the public, HKEAA in 2002 commissioned a consultant to conduct a strategic review of its functions and capability, and identify the necessary changes to enable it to better fulfill its roles and functions. The Strategic Review Final Report was completed in May 2003. A summary of the progress of HKEAA in implementing the recommendations is set out in Annex B.

12. Soon after the current Secretary General (“SG”) and his deputy (“DSG”) took up their positions in September 2004, they identified further areas for priority improvement and presented proposals to the HKEAA Council in April 2005.

13. The current systems for administering examinations are antiquated, heavily reliant on manual processes and outdated computer systems and processing routines. Processes such as the manual handling and marking of scripts and the reliance on markers to correctly add up marks, use the right score sheets and transfer scores correctly to score sheets, result in unacceptable incidents of missing scripts and technical or data preparation errors. While comprehensive re-checking processes are in place using hundreds of temporary staff, these processes are time-consuming and prone to human error. The answer lies in electronic scanning of scripts, onscreen marking and automation of processes using real-time processing on a web-based platform. HKEAA attaches utmost importance to running reliable examination results and therefore does not wish to implement new systems without full assurance of quality and cautious assessment of risks. However, to keep up with public expectations, to improve speed and accuracy of processing, and to enable implementation of new approaches to assessment of student performance, including standards-referenced reporting, HKEAA urgently needs to acquire and develop new information technology (“IT”) infrastructure and systems.

14. The SG and DSG therefore initiated in March 2005 an external Review Committee to conduct a thorough review of HKEAA's information systems and services in order to meet future challenges. In June 2005 the Council considered the Secretariat's proposal to set up a new IT Committee under the HKEAA Council to act on the findings of the Review Committee and to oversee the reform of HKEAA's IT infrastructure and systems.

15. The Review Committee submitted its final report at the beginning of August 2005. The report identifies a number of ways in which HKEAA needs to improve its systems and services in order to meet future requirements and new challenges. In particular, the Committee advised that the Information Systems and Services Division (ISD) should not be involved in the examination operations and that there should be a segregation of development and operations to provide the necessary checks and balances. The Council is scheduled to discuss the recommendations contained in the report, as well as establish an IT Committee at its next regular meeting to be held in September.

16. As a first step in eliminating the manual handling and processing of examination scripts, HKEAA Council has considered a proposal for the establishment of online marking centres for scanning and central marking of scripts. This will improve the effectiveness and efficiency of the administration of the examinations and reduce the risk of missing scripts.

17. To bring together the current dispersed quality assurance, internal audit and risk management functions for more effective check and control balance, the HKEAA Council considered this June a proposal to establish a Quality Assurance Unit and is scheduled to make a decision on the proposal, together with other restructuring changes, this September.

Summary of improvement measures

18. HKEAA will take immediate steps to improve the current systems, and in the longer term to modernize its IT infrastructure and to develop a fully automated and integrated examination system. The total improvement measures, which HKEAA has planned and fine tuned, taking into account the recommendations made in the two reports aforementioned, are set out below:

The IT area

- (a) To modernize the IT infrastructure and systems.
- (b) To set up online marking centres to scan examination scripts in 2006 and to pilot onscreen and central marking of selected subjects in 2007 as a first step in automating the examination process and eliminating manual processes.

- (c) To develop the new computer systems for the processing of examination results, starting with the implementation of standards-referenced HKCEE Chinese and English Language subjects in 2007, thus preparing the way for the development of systems for processing the results of the new public examination for the Hong Kong Diploma of Secondary Education in the context of the new senior secondary education reforms.

The management and operations of examinations

- (d) To more strictly enforce the procedures and communications for incident management, with the built-in elements of authorization, verification, documentation and reporting, and to have segregation of duties to avoid mistakes made by a single party.
- (e) To cultivate a more collaborative environment with closer communications at both the management level and the operation level in the ISD.
- (f) To improve the process of marking and checking of marks, including improvements to the design of the score sheets used by examiners and strengthening the random sample re-checking procedures.

The Governance of HKEAA and the structure of the HKEAA Secretariat

- (g) To set up a new IT Committee under the HKEAA Council to advise on and monitor matters related to HKEAA's IT infrastructure and systems.
- (h) To restructure the ISD with a view to enhance the supervision and monitoring, as well as the necessary checks and balances in the division. In particular, the development and operations functions will be segregated and the management structure of the division realigned to support the segregation.
- (i) To set up a Quality Assurance Unit, reporting directly to the SG and to continue to implement ISO9000 quality assurance processes.
- (j) To plan the implementation of a sound performance appraisal and management system tied to performance and an organization-wide staff development strategy, as recommended by the consultant of the Strategic Review. This is to enable HKEAA's staff to be professionally refreshed on a

continuous basis and be motivated to perform their best. In this connection, a review of the salary and benefit structure as well as the performance appraisal and management system of HKEAA staff was launched. The Council will consider the consultant's report and recommendations this September.

The Way Forward

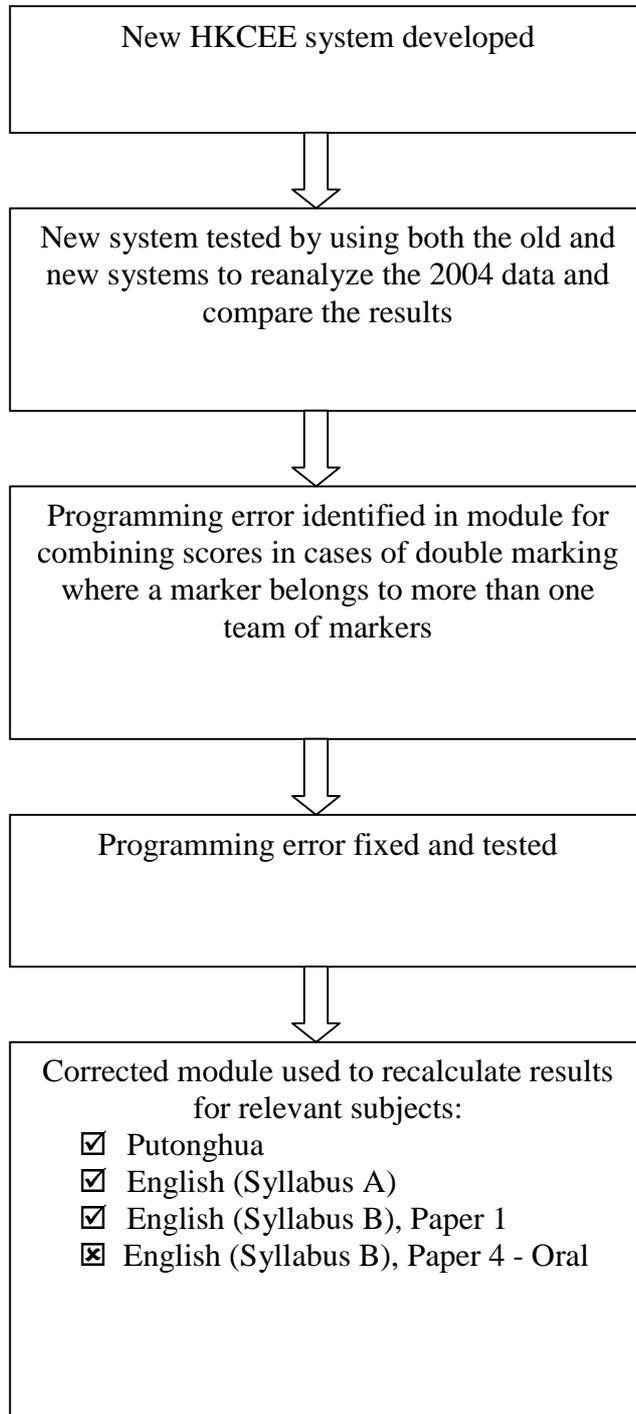
19. HKEAA and EMB do not consider it acceptable that there are any errors in examination results, and understand the sentiments and concerns of the public, in particular the candidates and parents, regarding this incident.

20. Although this was a localized incident, it has reinforced the priority to revamp the examination administration and results processing systems and procedures, and to focus further on quality assurance and risk management. HKEAA will make every effort to improve and to reestablish the public's confidence in its examinations operations, and in particular to strive to achieve zero errors.

21. We will continue to support HKEAA in all of the above. We have supported HKEAA with one-off grants for the development of new subjects such as Integrated Humanities and Science & Technology, and for assessment development and research activities. We will be presenting to the Education Panel for discussion further measures to support HKEAA's development needs, consistent with the strategic plan set out by the HKEAA Council.

Education and Manpower Bureau
September 2005

Annex A: A flow chart presenting the cause of the grading error



Annex B: Progress on implementing the recommendations of the HKEAA Strategic Review Final Report May 2003

Recommendations	Progress
(A) Strategic Direction, Management & Governance Structure, Finance	
(1) Strengthen representativeness of essential stakeholders and reduce size of the full Council to enhance effective communication	<ul style="list-style-type: none"> - EMB restructured the HKEAA Council from 27 to 17 members w.e.f. the September 2004 term, in effect rebalancing the Council by reducing tertiary representatives and widening stakeholders, especially parents and community. - HKEAA Council considered a proposal of restructuring its committees in mid 2005, which will be finalized by late September 2005.
(2) Reinforce strategic leadership	<ul style="list-style-type: none"> - Through global recruitment, a new SG with a strong assessment leadership background was appointed. The new SG and DSG commenced duties in September 2005. Both of them have rich experience in assessment, strategy formulation, management and administration.
(3) Enhance staff development & culture; Change organizational structure - Revise staff salary and benefit structure and performance management system - Restructure the Secretariat	<ul style="list-style-type: none"> - HKEAA completed the review of the salary and benefit structure, and the performance management system. - HKEAA Council will consider the consultant's report and recommendations in September 2005.
(4) Review the current financial model and revise the business model and pricing policies	<ul style="list-style-type: none"> - HKEAA redefined the financial and business models and set targets to recover the direct cost and then full cost of HKCEE and HKALE, subject to the economic climate and acceptance by the public.
(B) Relationship with external stakeholders	
(5) HKEAA and CDI should foster close collaboration at working level, with the	<ul style="list-style-type: none"> - HKEAA and CDI have been working closely to ensure alignment between C&A (e.g. the new

<p>intent of streamlining the number of subjects examined, producing common curriculum & assessment (“C&A”) guides for all public exam subjects, integrating and rationalizing the respective committees of the two organizations, and facilitating the implementation of school based assessment (“SBA”)</p>	<p>senior secondary education; SBA and standard-referencing reporting of the 2007 HKCEE Chinese and English Language subjects.)</p> <ul style="list-style-type: none"> - HKEAA and CDC set up the single committee (CDC-HKEAA One Committee) to replace the existing CDC and HKEAA subject committees to streamline the syllabus development process - HKEAA approved abolishing 5 HKCEE subjects and 3 HKALE subjects. The last year of examining these subjects will be 2006. - HKEAA published single C&A Guides for a number of public exam subjects as appropriate.
<p>(6) Engage key stakeholders actively in matters such as SBA & standards-based assessment</p>	<ul style="list-style-type: none"> - HKEAA has been collecting views through seminars and workshops with schools, teachers, & other stakeholders. - HKEAA set up the Public Affairs Unit, which reports directly to SG, for enhancing internal & external communications.
<p>(C) HKEAA’s assessment development, policy and research activities</p>	
<p>(7) The Government to fund a policy and research function within HKEAA</p>	<ul style="list-style-type: none"> - The LegCo Finance Committee approved a one-off assessment development and research grant to HKEAA in Feb 2004. - Projects in progress, in line with plans. The first annual progress report has been circulated to the Finance Committee members.