Report on PISA Field Trial of the Computer-Based Assessment of Science:
Operations and Outcomes in Ireland

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INTRODUCTION

Background to the Survey

The computer-based assessment of science (CBAS) is an international option of PISA 2006. The PISA Governing Board confirmed in March 2004 that the CBAS should proceed as an international optional add-on component to the main PISA activities. This decision followed the outcomes of a feasibility study carried out by ETS which indicated that it was feasible to conduct computer-based assessments (Lennon et al., 2003); however, what was not known is whether this was feasible across countries. Moreover, while it had originally been planned to develop a computer-based assessment of ICT literacy, in practice, this proved an impossible task. The focus therefore changed to an assessment of science which capitalises on the interactive characteristics of ICT and which requires minimal computer skills.

Participating Countries

There appears to be considerable interest in the CBAS but this has not translated into a large number of countries taking part. This is likely to be due to the relatively high costs of implementing CBAS, the risks involved in the very short developmental timeline (which was only half the length of the main PISA timeline), and potential risks to the implementation of the main PISA activities. The following 12 countries out of a maximum of 58 participated in the field trial in the spring of 2005: Australia, Austria, Chinese Taipei, Denmark, Iceland, Ireland, Japan, Korea, Norway, Portugal, Slovak Republic and the Russian Federation.

The following 20 countries had expressed an interest in participating but did not follow through: Argentina, Bulgaria, Chile, Colombia, Croatia, Estonia, Greece, Hong Kong, Hungary, Indonesia, Israel, Latvia, New Zealand, Peru, Scotland, Serbia and Montenegro, Spain, Sweden, Tunisia, United Kingdom.

Just four countries (Australia, Chinese Taipei, Denmark, Iceland) are implementing CBAS as part of the main PISA survey phase in 2006.

Aims and Purposes

The CBAS had two major aims. The first is to ascertain whether it is feasible to implement an assessment of science on computers in an international context. The second was to investigate whether, and to what extent, CBAS adds value to the existing paper-based assessment. It was thought that CBAS may add value in a number of respects. First, it was of interest to see whether students' engagement and motivation was higher on the CBAS. Second, the use of computers allows for a wider range of stimulus material and response formats than would be possible in a paper-and-pencil test, thereby offering an opportunity to assess a wider range of skills than would be possible on a paper-based test. Third, the

increased use of non-text stimulus material results in a decrease in the reading load, allowing for a 'purer' measure of scientific knowledge and skills. Fourth, and linked with the previous point, computer-based items have the potential to tap investigative approaches to science (e.g., simulations of experiments with variables which the students can manipulate). Finally, the software is capable of capturing students' behaviours as they take the test (e.g., amount of times a film clip is played, etc.

International Sample and Survey Design

Each country was required to sample a minimum of 450 students at random from a convenience sample of schools. That is, it was not a requirement to draw a random sample of schools (e.g., schools could be restricted to a particular region or regions); nonetheless, the sample was required to represent a mix of school types and enrolment sizes. Within each school, either 10 or 20 students were sampled at random from the list of eligible students. The number of students per school was decided on the basis of the number of laptops which a test administrator could reasonably transport from school to school and to the number of students and computers that could easily be accommodated in a classroom. For linking purposes, all students participated in both a paper-based test and a computer-based test (each one hour in length). To eliminate positioning effects (e.g., if students always took CBAS after the paper-based test, then estimates of item difficulties and student performance are confounded with student fatigues), half of the students were asked to do the paper-based test first and half to do the CBAS first. Countries had the option of sampling CBAS students from schools other than those selected for participation in the main survey design, or they could sample additional students from within the schools already participating in the regular PISA survey. Two test administrators per school were recommended, since the international design for administering CBAS entailed two parallel sessions where one half of the students took the CBAS and the other half took the paper-based first, and then swapped over. However, there was also a possibility of implementing the assessment using just one test administrator using the so-called 5-10-5 option (the first group of students completed CBAS, then all students completed the paper-based test, then the second group completed CBAS). Regardless of which test administration model used, however, students were tested in their schools on a single day agreed on by the school by trained test administrators. Test administrators administered the test on laptops connected using a wireless network and via test delivery software loaded onto the test administrator's computers. Students accessed the test by logging in with their ID.

Test design

A rotated test design was used for both the paper-based test and CBAS. This means that test items were bundled into half-hour blocks and students attempted various combinations of test items. This design is used to allow the trialling of a larger number of test items than individual students could reasonably attempt. Paper-based test items (64 in total) were taken from the

main PISA item pool. All CBAS items (116 in total) were developed from scratch (that is, they were not computerised versions of the existing paper-based items). Table 1 shows the test design for both the paper-based and the computer-based tests.

Table 1. Test Design for the CBAS Field Trial

First Hour		Second Hour	
Position 1	Position 2	Position 3	Position 4
CB1	**CB 2**	PB 7	PB 8
CB 2	**CB 3**	PB 9	PB 5
CB 3	**CB 4**	PB 6	PB 7
CB 4	**CB 5**	PB 8	PB 9
CB 5	**CB 1**	PB 5	PB 6
PB 9	PB 6	**CB 1**	**CB 3**
PB 6	PB 8	**CB 2**	**CB 4**
PB 8	PB 5	**CB 3**	**CB 5**
PB 5	PB 7	**CB 4**	**CB 1**
PB 7	PB 9	**CB 5**	**CB 2**

Note. CB = computer-based item block; PB = paper-based item block.

OPERATIONAL PROCEDURES AND OUTCOMES

Selection of Schools and Students in Ireland

For reasons of convenience, schools were sampled from Dublin city and county. Thirty schools were selected to participate. Of these, 24 were selected only to participate in PISA-CBAS; the remaining six participated in both regular PISA and PISA-CBAS by selecting an additional student sample (that is, students who participate in regular PISA did not also participate in PISA-CBAS). In 14 schools, 10 students were selected to participate; in 16 schools, 20 students were selected to participate. One school was unable to participate and was substituted with a replacement schools (i.e., a school of similar enrolment size, sector and gender composition).

Participation Rates

Participation at the school level was 96.7% and after participation, it was 100%. Participation at the student level was 83.0% - just 3% higher than the minimum requirement of 80.0%.[1] The percentage of students who were exempt due to special educational needs was above the recommended maximum of 5%, at 6.3%. A further 1.7% refused to take the test. Almost 4% (3.9%) had left school (3.0%) or had transferred to another school (0.9%). Just 2 students (0.4%) were age ineligible (probably due to a data entry error in the list of students. These

[1] These figures are unweighted.

participation rates are almost identical to those for schools and students participating in the regular PISA field trial.

National hardware and software specifications and procurement

The table below indicates the model type, specification and quantity of the laptops used to administer CBAS in Ireland:

	Specifications
Make:	DELL
Model:	D600
CPU model and speed:	Pentium M 1.6 GHz
RAM:	512 Mb RAM
Hard disk capacity:	40 GB
Screen size:	14.1” XGA
Network adapter type, make and model:	802.11g wireless
Optical drive type:	CD-RW/DVD-ROM
Operating System version:	Windows XP Professional
Pointing device used:	Symmetrical external, optical mouse
Listening device make and model:	Sony MDR-V150 Stereo Headphones
Number of Laptops:	50

Test Administration

Budgetary, time and logistic constraints led to a decision in Ireland to administer CBAS with one test administrator per school. This meant that test administration followed the 5-10-5 design described above. Given that it took about an hour to set up the laptops and wireless network, and that the tests were followed by a questionnaire, in most cases, it was necessary to administer the tests in the morning and the questionnaire in the afternoon. Five test administrators, retired principals, attended a one-day training. Half of the training covered their responsibilities, broad administrative tasks, and procedures for administering the paper-based test. The other half consisted of a hands-on demonstration of the CBAS software through a mock test session where five student laptops were connected to a test administrator laptop. It was highly desirable that these individuals would have experience both in assessment and in ICT (i.e., to be competent in the use of ICT and ideally to have had some experience with computer networks). However, in practice, only one individual met these requirements. The other four individuals, while being highly experienced in teaching and assessment, had lower levels of ICT competency.

Preparation of hardware and software

Two competent technicians were designated the task of preparing and testing laptops. The fifty laptops were dealt with systematically in small groups of 6 or 12, with two groups being prepared concurrently. Designated Test Administration laptops had the Test Administration Software installed. Each laptop had to be calibrated to suit the installation of the CBAS test administration and/or test delivery software and also to minimise the possibility of a test session being compromised by any attempts to interfere with the laptop settings. Changes were made to the Operating System settings of each laptop in line with the instructions provided by ACER. Each laptop group was connected via a wireless network. The installation and testing of the Test Administration software was very straightforward. The model for laptop preparation provided by ACER worked well, but with time being an important factor, there was little or no margin for error or delay.

Test administrators' onsite preparatory experiences

The set-up time for the CBAS Test Session depended on two factors; technical and practical competency of the CBAS TA and the level of co-operation provided by the School Co-ordinator and other relevant members of the school staff. Three out of the five CBAS Test Administrators noted that they would have appreciated more time for laptop set-up. The consensus was that 1 hour was insufficient time. The combined roles of Paper-based TA and CBAS TA resulted in these Test Administrators being under considerable pressure, particularly during the set-up period for both test sessions. Even a short delay in gaining access to school or designated test room resulted in TAs being short of time.

CBAS Test equipment logistics and storage was the responsibility of each CBAS TA. It was insisted that, at no point before, during or after testing, should any of the equipment be left exposed or unsupervised. Also, each TA was made aware of the necessity of secure storage of all equipment between test days. Each TA used their residence for storage and their personal vehicle for transport of test equipment. Each laptop, corresponding power leads and optical mouse were stored individually in a protective carry case. This meant that each TA had between 6 and 12 laptop units to move and store. Each laptop pack weighed 6kg.

Peripherals and accessories necessary for testing (Wireless Router, Headphones, Extension Leads, CDs, Hazard Tape and Hygiene wipes) were stored and transported in a heavy duty Rubbermaid-type injection moulded plastic container with lid. Dimensions: 56cm L x 38.5cm W x 29cm D. Capacity: 54 litres. Weight when loaded: 4.5kg.

The storage and transport of peripherals was considered appropriate and suitable by the Test Administrators. However, the transport of laptops was often cumbersome and also inefficient with regard to space. It was noted that the assistance of at least one member of school staff was essential, especially if the parking area and testing area were any further than a short distance apart. A solid unit with wheels and handle which could hold 2 - 4 laptop units may be more appropriate e.g. a small flight case or solid suitcase-type storage unit with wheels and telescopic handle. It would halve the number of units that had to be stored and lifted.

Engagement and Motivation of Students During Testing

In the student questionnaire, students were asked whether they enjoyed the computer-based and paper-based tests. Of students participating in CBAS in Ireland, 89.3% of students agreed or strongly agreed that they enjoyed the computer-based test, compared with 54.9% agreeing or strongly agreeing that they enjoyed the paper-based test. Three-fifths (59.1%) of students reported that they would take the CBAS just for fun, compared with 35.6% reporting that they would take a paper-based test for fun. Two-thirds (68.3%) of students reported putting the same amount of effort into both types of assessment; 20.6% reported putting more effort into CBAS, compared with 11.0% reporting putting more effort into the paper-based test.

Since gender differences in performance on CBAS but not on the paper-based test were observed (see the results section below), the results of these items were compared for males and females.

There are no discernible gender differences in the percentages of males and females reporting that they enjoyed the computer-based test (91.8% of females compared to 87.1% of males). Slightly more females than males (58.4% compared with 51.7%) reported enjoying the paper-based test. On the other hand, 62.6% of females compared with 54.9% reported that they would take CBAS for fun. The gender difference associated with percentages

reporting that they would take the paper-based test for fun was even more marked (41.4% of females compared with 26.2% of males). Results on the question which asks students whether they would prefer one hour of each type of testing, two hours of paper-based testing, or two hours of CBAS also shows a gender difference, with more males than females reporting preferring two hours of CBAS (57.4% compared to 42.5%). However, there is no gender difference in the amount of effort students reported putting into the two types of test. It is possible that these responses reflect, to some degree, gender-related differences in socially desirable responding. Nonetheless, these results, particularly pertaining to taking the two types of test for fun, suggest that the engagement of males in the paper-based test may be considerably lower than their engagement with CBAS, a pattern which is not as evident in the results for females.

Test administrators' live testing experiences

In general, TAs experienced little or no disturbances during CBAS test sessions. One student attempted to interfere with the power supply leads for the laptop that they were working on. Said student was generally disruptive and was eventually dismissed from the test session. The design and structure of the Test Delivery Software meant that it was impossible for students to interfere with this aspect of the test session. By far the most problematic aspects of test administration were the preparatory logistics onsite and the saving of the Response and Behavioural data files at the end of each test session.

Some difficulties were encountered with the strength of wireless network connection in particular areas e.g. a banking head quarters adjacent to one test site caused interference to wireless network signal strength. This did not interfere with Test Administration but did cause a disturbance to at least one test session.

Details of technical support provided during testing

CBAS technical support was provided by Jude Cosgrove and Stephen McMahon at the ERC. Both parties were contactable from 08:00 to 18:00, by both landline and mobile phone. Practically all of the many queries and problems were resolved over the phone. On only one occasion was a test site visit necessary. See Appendix A for details of support calls with the TAs.

Some Observations

Gender differences in the student questionnaire items which ask about enjoyment of both types of tests, amount of effort invested, and preference of the two types of test are difficult to interpret. Gender differences in reported enjoyment of CBAS are not evident. Nor is there evidence of a gender difference in reported effort invested while attempting the two types of assessment. On the other hand, considerably fewer males than females report that they would take the paper–based test for fun and more males than females indicated that they

would prefer to take two hours of CBAS over two hours of paper-based or one hour of each type of assessment, given the choice.

The behavioural data collected through CBAS gives further valuable (and empirical) evidence of a gender difference in engagement with CBAS. Across all countries, males exhibited 11% more 'behaviours' than females (e.g., playing and replaying a film clip which formed part of the stimulus text). This suggests that males are more physically engaged with the CBAS test, but whether and why this plays out into differences in performance on the test is not possible to infer.

DATA PROCEDURES AND OUTCOMES

Data Capture

The data saving procedures provided by ACER were simple and comprehensive. However, during the procedure for post-testing saving of Test Data, two flaws were identified.

Firstly, it was noted that several Test Administrators were using the touch pad on the TA laptop instead of the optical external mouse as instructed. This resulted in inaccuracies during the saving of BHV and RSP data e.g. TA may accidentally select a Response or Behaviour file that had been previously saved to the designated folders in My Documents. Subsequently, CBAS Test Administrators were contacted and given explicit instructions on how to save the test data (see **Appendix B**). It may be of benefit to disable the touchpad on the TA laptops for future CBAS testing.

Secondly, several Test Administrators had difficulty backing up RSP and BHV data files to the USB Flash drive. It was necessary to go through the saving procedure over the telephone on several occasions, and eventually, in person. This was a result of a lack of familiarity with the basics of computing on the part of some Test Administrators.

Because of an initial failure of CDs that were being used to store test data, this required an alteration to the post-testing Data Saving Procedure. USB Memory Keys/Flash Drives were used by all CBAS Test Administrators to backup the Test Data files. The NC discovered the fault early in testing so no data was lost. Behaviour and Response Data Files were delivered via USB Memory Key to the NC at regular intervals during the CBAS Testing period. It was felt that saving of Test Data Files to CD was unnecessarily complicating the backup procedure. This practice was abandoned early in the CBAS Testing period.

International Data Analysis and Scaling

Scaling Model Used

Both the computer-based and paper-based test data were scaled using ConQuest. The IRT model underlying the scaling is the mixed coefficient multinomial logit model (e.g., Adams, Wilson & Wang,1997). This is the same model as used for the main PISA test data. It is an extension of the Rasch or one-parameter model, the basic assumption of which is that student ability can be estimated independently of the item set attempted by individual students. The basic Rasch model is extended to allow for partial credit items.

Psychometric Properties

Figure 1 shows the relationship between the distribution of item difficulty and the distribution of student proficiency for the international CBAS Field Trial sample.

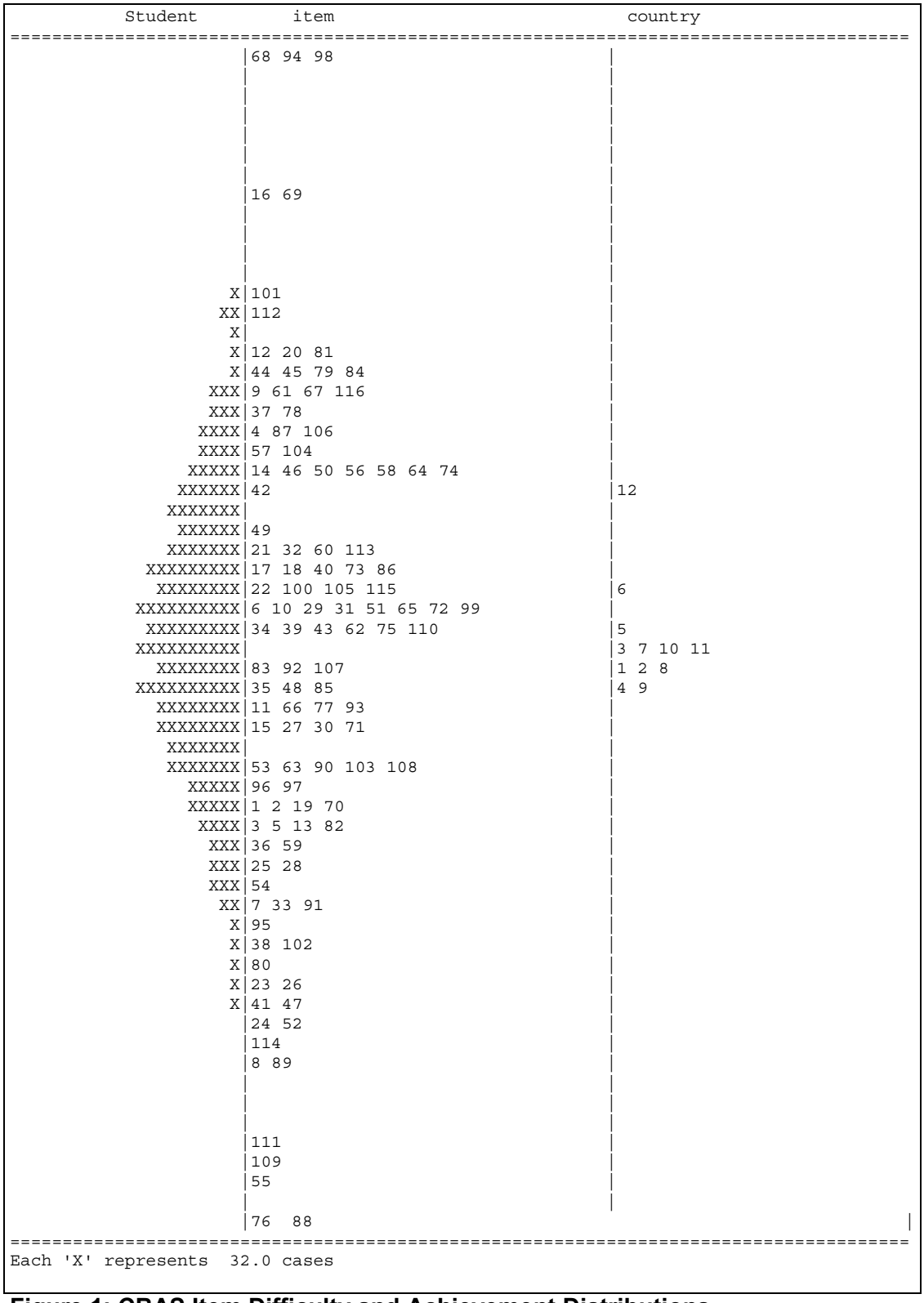


Figure 1: CBAS Item Difficulty and Achievement Distributions

The leftmost panel shows the distribution of students' achievement estimates for the CBAS test. The centre panel shows the distribution of item difficulties for each of the test items. A comparison of these two distributions indicates that CBAS is well targeted and item coverage of the extremes of the distribution is good. The third panel shows the distribution of country

mean scores (countries are not identified by name since cross-country comparisons on the basis of field trial data are not advisable). The distribution of country average achievement is quite narrow.

The international average reliability of the CBAS test items is satisfactory, at .799. Reliabilities range from .721 to .871.

The percentage of missing responses on CBAS (about 1%) is lower than on the paper-based test (5%), but this is due to the fact that all CBAS test items are multiple choice. The average percent correct on the paper-based multiple choice items is the same as the CBAS items.

The dimensionality of the CBAS and paper-based test items was investigated. The international correlation between performance on the two assessments is .90. When the model fit for the one-dimensional and two dimensional models is compared, it indicates a statistically significant improvement. This is also significant for each individual country. This shows that scaling the paper-based test and CBAS items as two separate scales is superior to scaling them as a single scale. However, this is not to say that there are not alternative ways to scale the data which provide an even better model fit (e.g., scale all physical sciences items from both the paper-based test and CBAS to produce a general physical science scale). Moreover, there may be gender differences in the dimensions underlying science achievement in that different dimensional models of achievement may apply to males and females. Further analyses are required to provide a better understanding as to the nature of the relationship between the paper-based test and CBAS and the knowledge and skills dimensions assessed.

Of the 116 items in the field trial, 25 of them exhibited a significant differential item functioning by gender. However, this differential functioning was not systematic. 12 items favoured females and 13 items favoured males.

Analyses of the Gender Difference in Performance on CBAS

Analyses of variance by gender and country were performed for both the computer-based and the paper-based tests. Results indicate that boys outperformed girls on the computer-based test and that this did not vary by country. The reasons for this difference were explored by the consortium in a few ways, summarised below.

First, it was hypothesised that the gender difference could have been due to the higher proportion of physical sciences items on the computer-based test compared with the paper-based one. However, the gender differences for physical sciences items and other items were in evidence, indicating that this was not a contributing factor (see Figure 2 which compares gender differences in logits on the paper-based and computer-based tests).

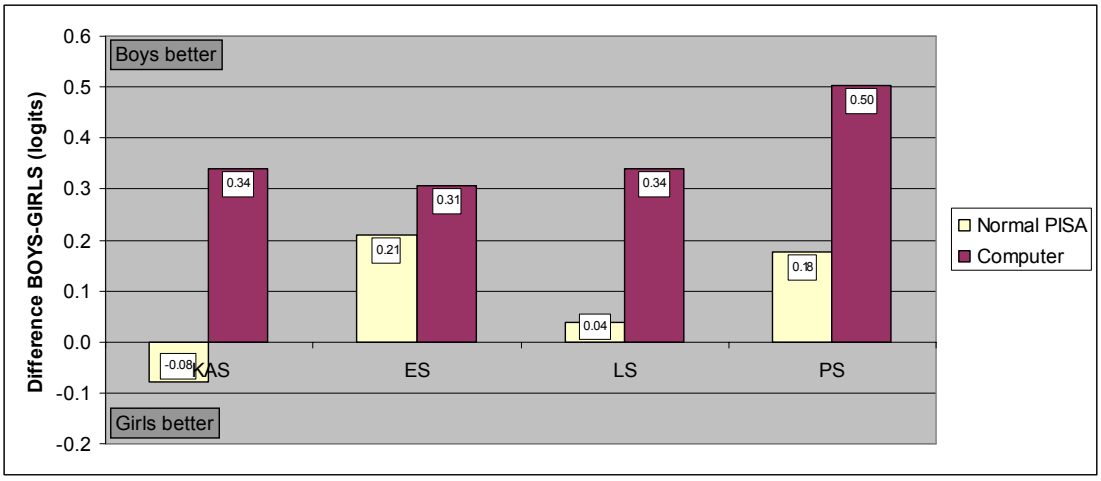


Figure 2: Gender differences in performance by test mode and topic area

Second, it was hypothesised that the gender difference might be mediated by ICT familiarity since only about 40% of girls compared to 60% of boys rated themselves as familiar with using computers. Furthermore, lack of ICT familiarity is associated with lower achievement on both the computer-based and the paper-based tests. It was found that while boys that are ICT familiar did *not* perform better than girls that are ICT familiar on the paper-based test, the same boys do perform better than girls on the computer-based test. This suggests that the computer-based test favours ICT familiar boys. The effect of ICT familiarity on the paper-based test is possibly due to differences in SES.

Fourth, the consortium also explored the influence of reading load on performance by classifying the paper-based and computer-based test items as having low, medium and high reading load (how this classification was made is not known). It was found that boys performed significantly better than girls on items with low reading load. This difference is much smaller on items with high reading load. While girl's performance decreased slightly on items with higher reading load, boys' performance decreased to a greater extent. Most computer-based items have a low reading load and therefore are less dependent on reading skills.

Fifth, they explored the effects of motivation, effort and enjoyment on achievement on the two types of test. Although boys tended to report a preference for computer-based testing more than girls, none of these factors was associated with achievement.

Finally, a positive relationship between performance and the number of interactions with the media was found, but the degree of this depended on the test form and varied from country to country. Boys interacted with the media more than girls in every country except one.

In summary, it appears that the gender difference in achievement on the computer-based test arises from a complex mix of factors relating to reading load, media interactions, and ICT familiarity.

National Analyses

These analyses should be treated as exploratory rather than definitive, since the sample size is small and based on a convenience sample design which includes only schools in Dublin. Further, the data are unweighted and no corrections have been made for measurement or sampling error.

In total, 320 students from 30 schools participated.

The Pearson correlation between performance on the two assessments is in the moderate range, at .70. The correlations do not differ by gender (.72 for boys and .71 for girls). This is lower than correlations between performance on the PISA paper-based achievements in reading, mathematics and science from previous cycles, which are around .90.

The national means on the computer-based and performance-based tests, respectively, are -0.245 (SD = 0.749) and -0.577 (SD = 0.966). Mean performance for girls was -0.341 (SD = 0.649) and -0.544 (SD = 0.894); for boys, it was -0.125 (SD = 0.842) and -0.617 (SD = 1.049). It is interesting to note that the standard deviation is smaller for the computer-based assessment and that the standard deviations for girls are smaller than for boys. The means suggests that Irish performance was below the international average of around 0.0 on both assessments, but particularly the paper-based test (note, however, that this is a small convenience sample of Dublin schools). There is a gender difference of around 0.22 on the computer-based assessment and around 0.07 on the paper-based assessment, consistent with international findings. The average number of media interactions was 88.85 (SD = 27.57). As with results internationally, girls interacted with the media less frequently than boys (respective means were 84.55 and 94.17).

To explore further the nature of the relationship between background variables and performance, two multilevel models were constructed, one for performance on the computer-based test, and one for performance on the paper-based test. The following variables were considered in the models:

Student-level: gender, SES (higher of parents' occupation), enjoyment of testing (composite measure), preference for computer-based test (composite measure), number of interactions with the media, and whether the computer-based or paper-based test was taken first.
School-level: average student SES.

The models include 269 of the original 320 cases – deletions were necessary due to missing data.

The between-school variance for the computer-based test is 14.8%; for the paper-based test it is higher, at 23.0%. The total variance for the computer-based test (0.537) is also smaller than the paper-based test (0.880). Thus, schools' and students' performance is more homogenous on the computer-based test.

Computer-based test performance results: there is a gender difference favouring boys in the region of a third of a standard deviation. The only other variables which are significant when tested alone are student and school SES. Tested together, student SES is no longer significant. The gender difference is of the same magnitude when tested with school SES indicating that the gender difference is constant across schools of varying SES. These two variables explain only 14.9% of the total variance: 10.2% within schools and 40.8% between schools.

Paper-based test performance results: When tested alone, the following variables are significant: student and school SES and enjoyment of testing. The remainder, including gender, are not. When tested together, student SES is not significant while the remaining two variables are. Together, these explain 19.5% of total variance – 15.1% of within-school variance, and 43.9% of the variance between schools.

These models suggest that the international findings do not fully hold when applied to the Irish data: for example, there is no relationship between media interactions and achievement. However, this finding may in part be due to the small sample size. Of interest is the differences in total and between-school variances, which suggest that performance on the computer-based test is more homogenous across schools and students alike.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

Benefits

- Student engagement and motivation are higher while taking CBAS
- We received strong support from schools arising from the innovative nature of the project
- Implementation was very successful despite logistic and time challenges
- The international context provided valuable insights into infrastructure and operations elsewhere
- The test items and item development software are of potential interest in other contexts, e.g., instruction or in-house assessment

Disadvantages

- In its present form, administration of CBAS is too costly
- The exact nature of the value added over and above paper-based assessment is unclear
- The cause of the gender difference in achievement needs further investigation
- The administration requires high technical competence on the part of test administrators and appropriate individuals can be difficult to recruit
- Transport of laptops poses logistic and security problems
- Administration of a stand-alone CBAS is fine but with regular PISA risks overburdening school staff and students

Looking to the Future

In conclusion, it would be worthwhile considering participation in the proposed web-based feasibility study, which is to take place some time in 2007 (at a time when countries are not concerned with the main PISA activities). Details of the feasibility study will be provided in January 2006. The budget for this is expected to be considerably lower than the original CBAS budget; however, there are a number of other issues to consider (e.g., cross-country compatibility of browser software, developing an adequate screening test to identify eligible schools).

APPENDIX A

- TA23 telephones 3 times to inform that the wireless network is not functioning properly and to request support. Under the circumstances, identification of problem and application of solution was not possible. TA 23 also telephones later on behalf of TA24 to inform that the Student laptops will not shut down in the normal manner. Attempted to resolve issue over the phone but this was not practical. Arrangements were made for onsite call.

- TA23 telephones – necessary to talk TA23 through the location and selection of the CBAS_Forms folder on the Student laptops. Solution found.

- TA 23 telephones – needing to be talked through the appropriate location for the saving of the CBAS_Response information file for school 72001.

- TA23 telephones to query default save location and name of CBAS_Response data. Solution was found, but it was noted that the Test Administration Software indicated that the CBAS Test Session (morning) failed to complete successfully.

- TA22 telephones to query about transferring of completed test data to CD. Problem with the Roxio burning software. Solution is to store the data on the memory key drive that is supplied with TA Kit. TA was satisfied with this and also noted that both the morning and afternoon testing sessions passed without any technical or administrative complications.

- TA21 telephones Jude Mobile to inform that TA21 USB memory key has the wrong Student Information Files. The CBAS_Student Information folder in My Documents on the TA laptop contains the SIFs that are to be used during testing. TA21 indicates that these are also the wrong SIFs. Error occured during laptop preparation. Correct SIFs were emailed to TA21. TA confirmed receipt of files by 10am.

- TA23 telephones to request support. Student cannot log on. The practice session has been started for the other students. Schedule is very tight because of School's lunch break. Stephen spoke with Jude in relation to this and returned call to TA23 to inform that student could be added to afternoon session.

- TA23 telephones with a query as to how to burn test data onto a CD. Some confusion at their end about using USB memory key to save data to CD. Suggested that they bring in TA laptop at their earliest convenience so that Test Data recorded to date can be backed up for safe keeping.

- TA23 visits with CBAS paper based materials from schools tested to date. Opportunity is used to talk through experiences so far and also to bring to their attention the decision regarding saving of Test Data to USB memory key. Procedure for this step is written up in the presence of TA23 and two copies are given (TA23 & TA24).

- TA21 phoned to indicate some confusion about School Questionnaire - told him that there was no School Questionnaire for CBAS schools and apologised for the confusion. He also commented that early March was a crisis time for principals and not the best time to complete a questionnaire. Thanked him for his advice.

- TA23 visits with memory keys for both TA23 and TA 24. BHV data from morning session at school is missing, as is the RSP data from the afternoon test session. Strong possibility that here is an inconsistency in the following of procedure outlined in TA Manual. TA23 is asked to telephone Stephen after next testing session before data is saved so that they may be talked through it over the phone to confirm that procedure is being adhered too. Because of practically identical error occuring, TA25 is telephoned and asked to contact Stephen before saving of test data after next testing session.

- TA23 phoned to alert us to the fact that one student's test form had not loaded up onto the computer. ID is 9201100013. TA computer indicated a network connection and practice session went fine. Advised TA, given time constraints, that it was not possible to restart the session, but that student should wait five minutes or so in case computer booted up again, otherwise record it as a computer error on the SRF.

- TA21 phones Jude to inform that student laptops cannot log on to the test session. Telephoned back from ERC to confirm that students had been added to the test session on the TA laptop. TA21's assistant (his son) confirms that students had not been added and that is why the students could not log on to test session.

- Telephoned TA23 about the saving of test data, confirmed that they saved data successfully this morning.

APPENDIX B

PISA 2006 FT CBAS

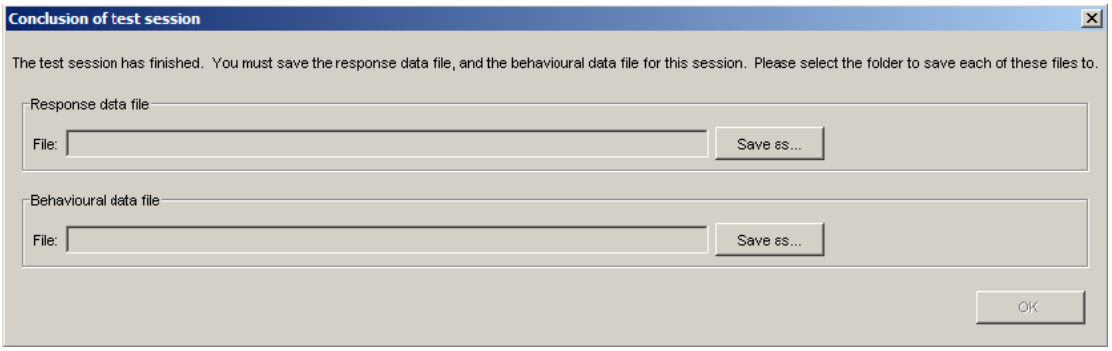
PROCEDURE FOR SAVING OF TEST DATA

This procedure is to be used to successfully safe the **Student Response and Behaviour Data** at the end of **EACH CBAS** testing session. The instructions detailed below are intended to compliment the extensive instructions detailed in the **PISA 2006 FT CBAS Test Administrator's Manual**, which, it is taken for granted, you have read thoroughly and understood.

The Test Administration Software will indicate that the Test Session has been completed. The following screen will appear, requesting that you take appropriate steps to save the **Response (RSP)** and **Behaviour (BHV)** files to the appropriate folders.

The diagram below **(Screen A)** represents exactly what you will on the screen of the TA laptop.

Screen A

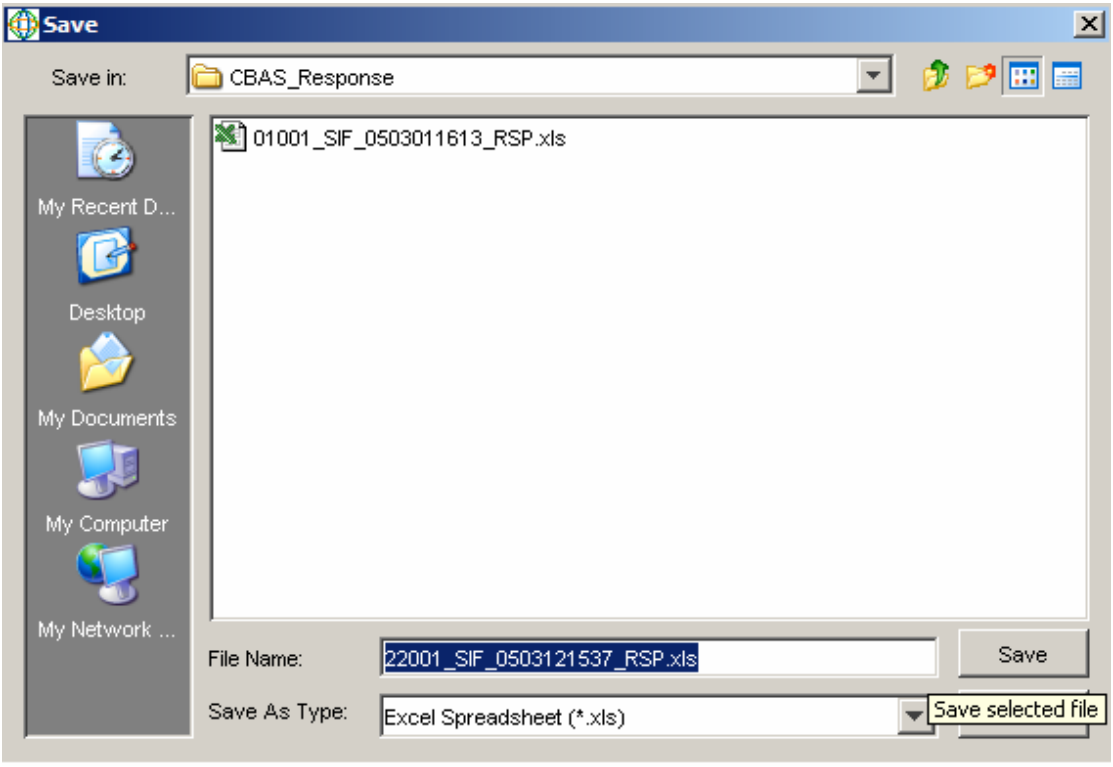


The First step is to save the **Student Response Data (RSP File)**. The location that the file must be saved to is the **CBAS_Response** folder in **My Documents**. Click on the **Save as** button underneath and to the right of the Response data file text window.

A screen **(Screen B, see Page 2)** will appear asking you to select the location where the RSP data file is to be saved. Locate the **CBAS_Response** folder in **My Documents**. This can be done by clicking on the **My Documents icon** that is visible on the left side of the **Save** screen.

NOTE: The Test Administration Software has been designed to automatically generate a unique file name for the data that you are saving. This file name will appear in the **File Name** text box at the bottom of the **Save** screen. It consists of the **PISA ID** of the school being tested followed by date of testing and exact time of completion of the test session being saved. **DO NOT** attempt to change the file name generated by the software. **DO NOT** click on any file that may already be saved in the **CBAS_Response** folder. This could result in a loss of valuable data.

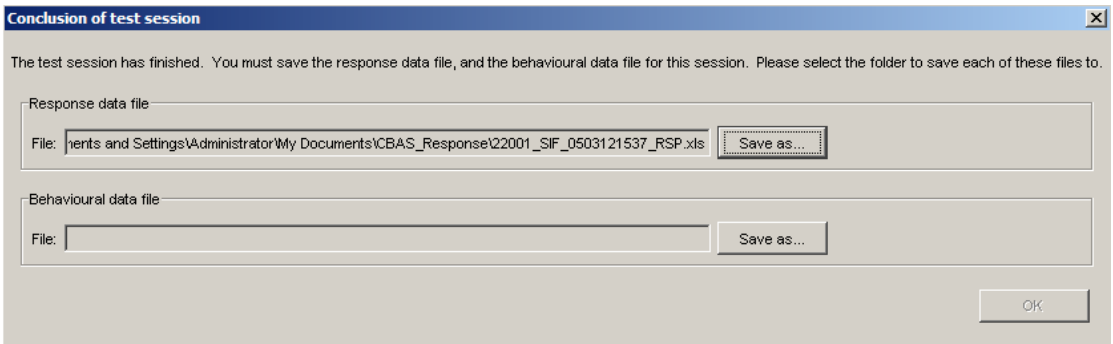
Screen B



When you have located the **CBAS_Response**, file double click on it to open and then click on **Save**. There is no need to type any text before completing this step in the procedure.

The next step is to select the appropriate location to save the **Student Behavioural Data (BHV File)** in. The Conclusion of test session screen will be visible again as detailed below **(Screen C)**.

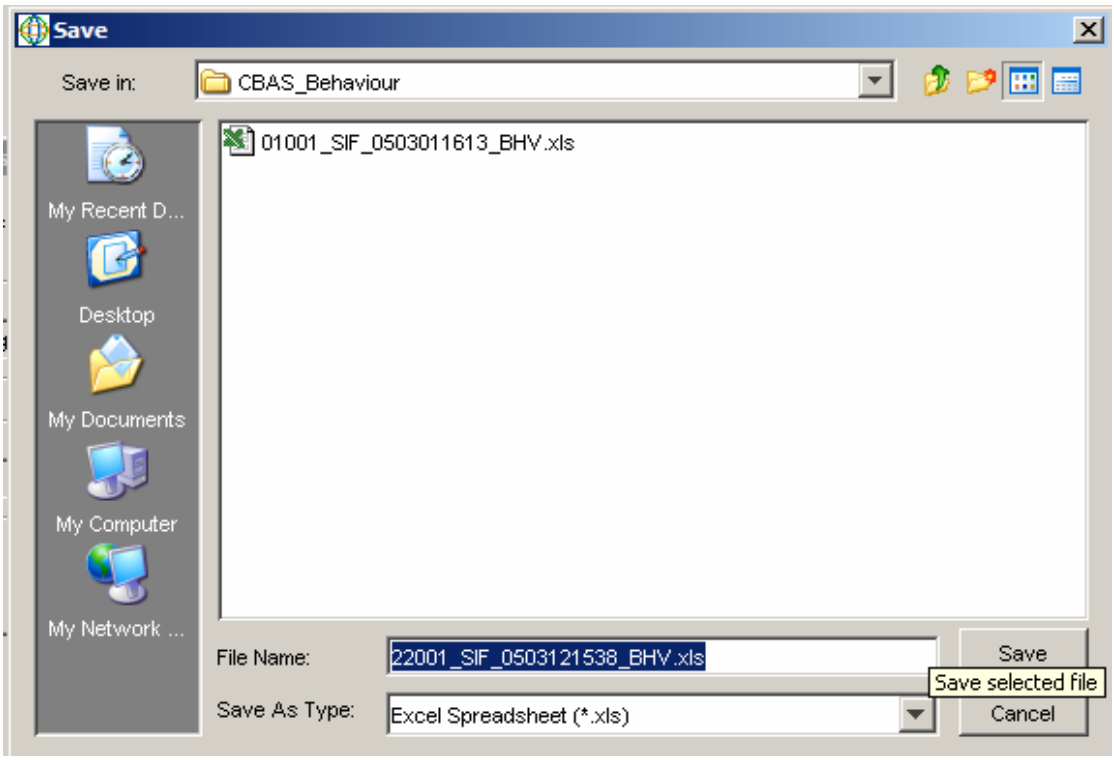
Screen C



The location that the file must be saved to is the **CBAS_Behaviour** folder in **My Documents**. Click on the **Save as** button underneath and to the right of the **Behaviour data file** text window.

A screen **(Screen D, see Page 3)** will appear asking you to select the location where the **BHV data file** is to be saved. Locate the **CBAS_Behaviour** folder in **My Documents**. This can be done by clicking on the **My Documents icon** that is visible on the left side of the **Save** screen.

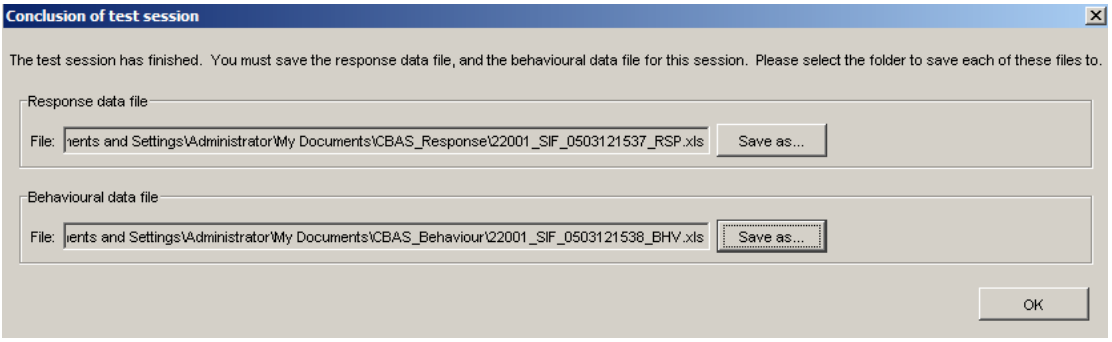
Screen D



NOTE: The Test Administration Software has been designed to automatically generate a unique file name for the data that you are saving. This file name will appear in the **File Name** text box at the bottom of the **Save** screen. It consists of the **PISA ID** of the school being tested followed by date of testing and exact time of completion of the test session being saved. **DO NOT** attempt to change the file name generated by the software. **DO NOT** click on any file that may already be saved in the **CBAS_Behaviour** folder. This could result in a loss of valuable data.

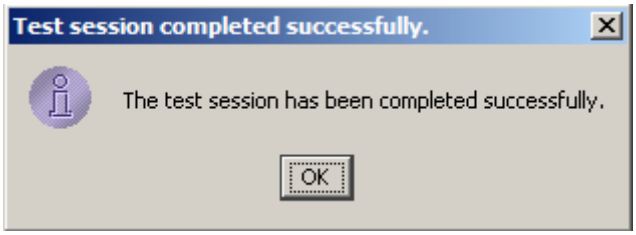
When you have located the **CBAS_Behaviour** file, double click on it to open and then click on **Save**. There is no need to type any text before completing this step in the procedure. At this point the **Conclusion of test session** screen will appear as detailed below **(Screen E)**.

Screen E



To complete the procedure, click on the **OK** button on the bottom right of the **Conclusion of test session** window.

There may be a short pause while the Test Administrator's Software completes the saving process. The following notice will appear indicating that the test data has been saved.



Click on **OK** to acknowledge this message and complete the data saving procedure.

Please refer to the PISA 2006 CBAS Test Administrator's Manual to continue from here.