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## Matsec examiners report 2019

Differentiated paper system of the Maltese SEC: does it promote quality, fairness and fairness? Jacqueline Pace Department of Physics, Junior College, University of Malta paper presented at the British Education Research Association's annual conference, Heriot-Watt University, Edinburgh, 11-13 September 2003

Summary Assessment and learning methods at secondary level in Malta is dominated by a differentiated examination of the completion of compulsory training. This study is based on the historical environment from the beginning of sec exam differentiation (secondary education certificate), focusing on physics SEC - the scientific exam that has the highest nomination. In Malta, candidates choose from two test directions – A or B. Both after the same physics programme and have many overlaps. Although paper A class 1 to 5 (1 is the highest), B classes 4 to 7. This differentiation is achieved using differentiated paper. The examination consists of three parts: document 1 is common to all candidates; Document 2 is designed in two forms according to the same themes: documents 2A and 2B, the latter of which are lighter; and a practical component of coursework marked by students but supervised by MATSEC (Matriculation and Secondary Examination Commission). This study examines the Physics SEC exam in May 2000 using MATSEC data for all 3939 candidates; currently, document A sorted only from 1 to 4. All its different components shall be analysed in such a way as to determine whether this system supports quality, fairness and integrity. The purpose of this study is to identify any distortions that reduce the validity of the system. In physics SEC, paper B candidates make up about double the paper-A number. This part appears to have settled between 1997 and 2000. The tendency to choose a lighter Document B is more pronounced in public schools. This study shows that a noticeable number of high-profile candidates who had to choose a document A sat on lighter B paper. This cross-over to a softer option distorts the final level of candidates. The end result is that not only are paper B candidates at a disadvantage, as there is a reference to rates with some very good candidates, but also because of the high potential for candidates covered by Book A, it is more difficult to reach higher levels, as there are fewer candidates with lower average capacity. There were no significant gender differences between the candidates' overall results and paper 1, although more girls than boys chose document B. There is some evidence that girls better perform elements that require high verbal writing skills and seem to welcome the way the book has a 2A structure, although there are no gender differences in their score for this paper. Paper 2B girls perform significantly better than boys. Thus, differentiation in both 2 documents itself promotes gender bias. In there is an unresolved voltage between function and differentiation result. The Matsec Board adopted one of the recommendations of this study that the SEC should increase the degree of class overlap. Its impact has yet to be fully assessed; other recommendations are still being evaluated. 1.0

Introduction Paper basically comes from my master's thesis along with other consequences. The purpose of this study is to take a critical look at the differentiated paper system, which is adopted instead of external examinations. However, since the aim was to move to this issue qualitatively, without quantifiable, it was decided to narrow it down to one particular subject, and thus physics, being the main line of competence of the author, was a natural choice. So the main concern of this study is to try to raise the problems, criticism and consequences of the study of the physics of the surface differentiated paper system SEC. 2.0

Objectives of the study The objectives of the study stem from the general objective set out above and are set out below: 1. How do more candidates choose a Document B relating to gender or type of school? Is there any specific group to which this fact favours or interferes? 2. Does the final level of candidates adequately reflect their abilities? Does the paper they have chosen, their gender or the type of school affect their class? How does this ranking allocation relate to global scores? 3. How does the performance of candidates in each constituent documents correlate? Does each exam component promote the fairness of the possibilities and results of candidates with different gender, paper choice or school type? Or are there other discriminations based on ability? 4. What is the impact of the school's assessed coursework, i.e. practical, on the final class and how well is it integrated with the other components? 5. Do all documents contain any individual points that indicate gender bias? How are the results of paper candidates compared with the results of paper B candidates at specific points in the single document, i.e. document 1? 6. In what ways is paper 2B lighter paper than 2A? Is this reflected in all the 2 points of the document? And do the cognitive levels tested match this? Is Paper 2 well aligned with the ability of candidates? 7. Can the test articles of each component paper be considered to be sufficiently valid to support the overall conclusions on the physics of a differentiated paper system in the SEC? 3.0

The establishment of malta's education system is based on school education, which is legally binding on all five to 16-year-olds. Pupils around the age of five enter primary school. The state primary school system practices broadcasting from the age of five (about 9 years). After six years, the last year of primary school, pupils are divided into academic, single-sex Schools. Of the 80% of the cohorts of this exam, about half of them go to the Young Lyceum, while the rest mainly attend district secondary schools and, more recently, shopping schools (the latter were gradually closed in 2002). The remaining 20% sit for a national exam in the public sector or a school exam in the private sector, but both groups cannot be selected to take part in the Youth Lyceum. A small minority of under-performing pupils are selected to go to boys' and girls' schools, also known as former opportunity centres. In these single-sex schools, they follow the primary curriculum, but in the middle account. Malta's school education is also made up of a strong private school system, serving almost 30% of the cohort and consisting of both independent and Catholic Church schools. Private education generally hampers the state education system, as it contributes significantly to the intensification of inter-school and internal broadcasting and selection. Worse still, private schools add an already rooted culture of competitive achievement that glorifies exams and certifications that go beyond the needs and development of the child (Sultana, 1998). In addition, some pupils attending private schools still choose to sit the state 11plus exam, and some of those who move from private school to the state Youth Lyceum. Boys in the same cohort can also sit behind a general entrance church 11plus exam to enter church schools that either do not have primary feeders or have a larger secondary school than primary school. On the other hand, all girls' schools receive all their consumption directly from the feeder primaries, so this exam is not open to girls. These two national 11plus exams are able to assume a significant part of the public eye, which can be considered a high-ranking assessment experience for primary school children in Malta. Although these exams confirm different criteria for determining success, they still contribute to a certain mobility of students between the public and private sectors. At the end of secondary schools, pupils sit external exams, which, in addition to the accreditation of pupils, provide access to post-secondary education. Malta's main post-secondary institution is the University Junior College established in 1995, where students who seek higher education at the university itself (Junior College, 2000) are enrolled. Other post-secondary academic institutions include the state's higher secondary, private sixth forms and the recent MCAST, which offers technical courses in various fields and at various levels. Secondary students who start their fifth year have to make decisions that are usually related to external examinations, which they intend to take at the very end of compulsory education. A number of decisions to be taken in relation to the investigation are based on: studies needed to continue the any special requirements required for certain post-secondary courses. They may choose local SEC exams from matriculation and Secondary Examinations Board since 1992, or foreign GCE exams, which are still allowed as an alternative. Although UK GCSEs were not installed locally, it was influential in sec exams not only on philosophical grounds, but also in the evaluation of programmes, operations structure and system (Ventura and Murphy, 1998). So, as in the case of GCSE, the SEC exam is quite different from GCE, as it is designed to certify all secondary students and not just to provide access to courses after secondary school.

Sultana (1998) also found that while only about 20% of students used to sit outside GCE exams, the SEC exam serves about 80% of the cohort. While some exams, such as the English SEC, may can be inflated by the influx of repeaters. However, it is worth noting that this percentage also includes students from the lower end of the flow of achievement who were previously inclined to complete an 11-year school without any formal mandate (ibid., p. 127). The SEC exam ranks students according to a wide range of achievements: 1 is top notch and 7th lowest. Initially, the aim was to have one document for each issue, and the issues were becoming increasingly difficult to meet all skills. However, the new format sec exam chose two 2-hour documents for each subject. Document 1 is common to all students and must therefore satisfy the full range of competences and in many cases include aural, oral, practical or coursework component. Paper 2 requires students to choose whether to test a 2A or 2B document, which can be distinguished as follows: PAPER IIA Document, which contains more demanding questions than document I - it is addressed academically more academically to candidates, and is intended for those who expect high achievement and want to move to higher education on the subject of paper IIB A document covering less demanding issues than document I - it is addressed to less academic candidates, and it is intended for those who will not pass the high classes (MATSEC, 2000b) No change is allowed after the registration period. Candidates sitting in Documents 1 and 2A may receive grades 1 to 4 only if candidates sitting in documents 1 and 2B can receive grades 4 to 7. Candidates receiving less than level 4 from 2A, and candidates receiving less than level 7 2B, remain unclassified (U). Physics SEC coursework is a practical laboratory report. The average mark is taken from the top fifteen practical reports, starting with a physics curriculum, which each student works on for three years of physics studies. MATSEC markers with a wide sample to ensure that teachers' signs are awarded with other schools and meets the practical criteria and guidelines set out in MATSEC. Practical performs 15% of the total exam weights. Document 1 consists of 10 mandatory filling questions to be completed within two hours. Questions range across the physics curriculum and are dedicated to 10 characters, each summing up a total of 100 characters. It performs 42.5% of the total exam and is a common document for all physics candidates. Document 2 is also a two-hour paper, with the rest of the marks, i.e. 42.5%. It consists of 5 extended answers to questions, which have allocated 20 characters, each of which consists of a total of 100 characters. This document tests less than 1 paper. Candidates sit on paper 2A or 2B according to their previous choice when they have signed up. 5. the questions in both documents relate to the same field of physics; however, the format of the questions is slightly different. Document 2B may contain parts of completely missed questions; however, it contains more explanatory charts than just text. Document 2B is also to be completed on paper, and in document 2A, candidates reply in a separate brochure. Example Example The context of the study was chosen in May 2000. It was considered that the actual exam scores and scenarios had to be analysed in order to address research issues. The performance scores of all 3939 candidates sitting in this session, together with relevant scenarios, were reviewed with the permission of the MATSEC Board. For ethical reasons, specific data were not analysed for certain groups that could be identified in any way. Candidates who did not complete all the components of the exam were excluded. I lentelė: Fizika SEC 2000 kandidatai pagal lyčių ir mokyklų kategorijas BOYS GIRLS IŠ VISO Frq % Frq % tot Junior licejus 657 16.6 1050 26.7 1707 43.23 Plotas Vidurinės / Prekybos mokyklos 161 4.1 199 5.0 360 9.1 Bažnytinės mokyklos 741 18.8 414 10.5 1155 29.3 Nepriklausomos mokyklos 127 3.2 82 2.1 209 5.3 Po vidurinės mokyklos 97 2.5 160 4.1 257 6.6 Privatūs kandidatai 159 4.1 92 2.3 251 6.4 Iš viso 1942 49.3 1997 50.7 3939 100.0 Jaunimo licejus, kaip matyti iš I lentelės, sudaro daugiau nei 40% studentų, kurie sėdėjo fizikos SEC 2000. It can also be seen that a higher percentage of junior lyceum girls than boys sat in this study. The other highest proportion of candidates (about 30%) were from Church schools; but there were more boys than girls. Area High and Trade Schools were merged because they accounted for only 9.1% of all candidates. Although independent schools accounted for only 5.3%, it was considered that they could not be grouped into other types of schools as they could lead to inconsistencies in the overall analysis. Finally, there were private and post-secondary candidates who had two factors; they were not a cohort of the same age as others, but were usually older, in some individual cases much older and, moreover, they are quite heterogeneous. 5.0 Methodology In order to find answers to research questions, the Physics SEC 2000 study was analyzed on three main aspects. Distribution of grades and global scores Distribution of rough scores in each founding document and correlation between them and with the global score Analysis of each component elements Therefore all data of the 3939 physics SEC 2000 candidates were broken down by gender, age, school type, results of each exam component, each question (point), as well as their final and global score. The SPSS software was used for the relevant statistical analysis; each statistical as described below has been established to verify a zero hypothesis with tail 2 to ensure stricter statistics. 6.0 Results 6.1 Cohort comparisons Table II shows that more than 75% of candidates who sat for the exam were born in 1984, which means that in 2000 they became 16 years of age. The rest probably consists of candidates who are doing the second test, although that doesn't exclude that there may be older candidates who sit in SEC physics for the first time. The National Public Register 1984 reports 2,901 male and 2,670 female live births. This means that of all male births only 48.6% sat in physics sec 2000 and 59.6% of women did (on average 54.1% of registered population). This is quite a big gap, although, of course, these statistics do not take into account any fluctuations in numbers due to death, immigration and emigration. In addition, around 1984 students were able to repeat the school year and therefore did not sit for the exam, despite having had the necessary qualifications (16 years in 2000) because they did not complete the entire physics programme. Table II: Physics Distribution SEC 2000 Candidates by Gender and Year of Birth Birth Boys Girls Total 1.1.1985 1984 1410 1592 3002 1983 432 311 743 1982 67 75 142 15 15 11 26 1980 and up to 17 6 23 Total 1942 1997 3939 If two main figures are encountered, table I gives a rather disturbing picture. Either only about half of Malta's population was born in 1984, or only about 63% of the total early school leaving population actually sat in physics for the SEC in 2000. While there may still be those who choose a different examination board rather than MATSEC, there are not enough of them to make an impact. A relatively smaller number of candidates sits on other scientific subjects, namely biology and chemistry (MATSEC, 2002a). In addition, there may be a good percentage of these that sit more than one tuition sec exam. Thus, the situation may be such that after 11 years of formal training, early school leavers do not have any certificate of education (also confirmed by the same data as MATSEC, 2002c). 6.2 Paper selection from Table III, only about a third of candidates sitting in physics sec 2000 took paper A. There is a general gender balance. However, there are categories of schools where a higher proportion of girls chose Paper A than boys, especially youth lyceum and Church schools. However, the higher number of boys who chose Paper A in independent schools ensures that, in general, it is boys who chose Paper A. Table III: Physics Distribution SEC 2000 Candidates Paper Choice by Gender and School Category SCHOOL CATEGORY BOYS GIRLS TOTAL Paper A Paper B Paper A B Junior Lyceums 143 (21.8%) 514 (78.2%) 316 (30.1%) 734 (69.9%) 459 (26.9%) 1248 (73.1%) Area Secondary/ Trading Schools 4 (2.5%) 157 (97.5%) 1 (0.5%) 198 (99.5%) 5 (1.4%) 355 (98.6%) Ecclesiastical schools 426 (57.5%) 315 (42.5%) 252 (60.9%) 162 (39.1%) 678 (58.7%) 477 (41.3%) Independent schools 65 (51.2%) 62 (48.8%) 35 (42.7%) 47 (57.3%) 100 (47.8%) 109 (52.2%) After secondary school 7 (7.2%) 90 (92.8%) 3 (1.9%) 157 (98.1%) 10 (3.9%) 247 (96.1%) Private candidates 15 (9.4%) 144 (90.6%) 9 (9.8%) 83 (90.2%) 24 (9.6%) 227 (90.4%) Total 660 (34.0%) 1282 (66.0%) 616 (30.8%) 1381 (69.2%) 1276 (32.4%) 2663 (67.6%) The traditional approach to girls is less confident than boys of scientific subjects can find some confirmation here (Hili and Zammit [Pace], 1991; Elkjaer, 1987). However, it can be concluded that girls take a less risky route, another stereotypical representation of the gender of women. It is necessary to see whether this tremor from a more difficult choice ultimately pays off with a higher achievement. One also observes a fairly predictable, very small percentage of candidates who have chosen paper A from area secondary and commercial schools. This is especially important when reminded that their percentage is only typical, that a small part of the cohort (about 20%) actually for the study (Table II). If 1.4% (shown in Table III) were to be expressed as a percentage of the cohort of the school and district secondary school dropouts, it would be minus 0.003%. This is not surprising if you consider that the existence of document B is in fact closely linked to these candidates. In fact, a differentiated paper system exists because of the tripartite school system. Perhaps more worryingly, even half of the junior lyceum candidates did not choose document A, rather than the Church and independent schools, whose use is broadly similar to the Junior Lyceum. This may indicate a problem with proper instructions, as specified in the Approach Study (Pace, 2000). It is possible that junior lyceum candidates underestimated their abilities or that the candidates of the Church and independent schools overestimated their abilities. In any case, these are the scores themselves that can shed light on this. 6.3 Global scores and grades It is interesting to note from Table IV that there are more candidates who manage to qualify for grades 1 to 5 than 6 to U. Girls are also more than boys in upper classes, as well as fewer lower classes, although this difference is not significant at all. However, this gender gap reaches meaning in paper-B candidates, where girls exceed the number of boys in the top grades and vice versa. Table IV: Gender breakdown of classes Frequency N Paper A Paper B Total Boys' grades 1 to 5 590 611 1201 Classes 6 to U 70 671 741 Girls 1-5 552 736 1288 grades 6 to U 1 64 645 709 X2 (df=1) 0.02NS 8.45\*\* 2.45NS \*\* = p<0.01(2-tailed) NS = NOT significant Although there are no significant gender differences in the overall class distribution, those received by paper B girls, shows that many of them are more likely than the male concerned. These girls receive significantly higher grades than boys (c 2=8.45, p<0.01). This contrasts sharply with the paper-candidates who show quite the opposite effect as boys outperform girls, especially in the top two classes. Table V shows that the drift of candidates from three of the six categories is undeniable towards the lower classes. This is an area of secondary/marketing schools, private and post-secondary candidates who have more or less similar results. On the other hand, as far as youth lyceums, churches and independent schools are concerned, they have the opposite skew toward higher classes. In fact, in these three, only about a third of all candidates fall below the last useful level, i.e. level 5. Table V Distribution of classes into two opportunities Groups by school category class of skills groups 1-5 grades 6 grades to U Junior Lyceum 1122 585 Area Secondary/Commercial Schools 83 277 Church Schools 83 277 978 177 Independent schools 159 50 After secondary school 64 193 Private candidates 83 168 TOTAL 2489 1450 School categories results correspond to the expected models. One expects junior lyceum, church and independent schools to get the best results, and in fact it is so. On the other hand, area high/commercial schools are likely to get more lower grades than higher grades. Post-secondary candidates and private candidates provide an element of unpredictability, although if less than 10% of these candidates are deemed to have opted for a document A, the results of the allocation of the level are not surprising. 6.4 Inter-paper and inter-paper analysis This section attempts to analyse the various components of the study, both in combination and separately. This analysis can draw some important conclusions. It is immediately apparent from the inter-paper correlations that the practical weight is not the same as the other (Table VI). Due to the hand, there is a certain degree of harmony between all the other documents. However, the obvious similarity may hide some important differences between the activities of the different sub-groups in each document. Table VI: Inter-paper Pearson r Correlation values on paper 1 Paper 2A +0.78 Paper 2A Practical +0.32 +0.29 Practical Global +0.93 +0.94 +0.46 Paper 2B +0.90 Paper 2B Practical +0.33 +0.32 Practical global +0.96 +0.96 +0.51 All r values reach the value at p<0.001(2-tailed) When focus is turned on in practice, several important results are made. Firstly, small correlations, albeit relatively small, are higher for this session than when they were measured in the study of practical work of physics in Xuereb (1996). In addition, this study found that in physics practical, girls were more orderly and more organized in general, but boys were better at performing scientific deductions and problem solving. These characteristics helped girls achieve better scores than boys in practical terms, which is also true of this study. Table VII shows that this practical gender gap ensures that paper Class A girls pay off from boys in Document 1. Overall, paper candidates received better practical scores than paper B, although this is expected. In addition, getting high scores for their practical coursework is relatively easy for all candidates and may even be one of the reasons why some candidates choose document A (Figure 1). Table VII: Average scores, s.d. and t values for each gender for boys' independent samples for t-test value N Mean s.d. N Mean s.d. Paper 1 1942 55.17 21.7 1997 54.42 20.7 +1.10 NS Paper 2A 660 58. 33 14.9 616 58.60 14.1 -0.33 NS paper 2B 1282 41.82 20.1 1381 44.37 19.4 -3.30\*\*\* Practical 1942 12.49 1.9 1997 13.02 1.6 -9.24\*\*\* \*\* = p<0.001 (2-tailed) NS= NOT SIGNIFICANT It was also observed that junior lyceum, their practical score was better than their overall performance (Table IX). This may indicate that practical scores are inflated, albeit not only by junior lyceums, and they are certainly higher on average than those corrected by the MATSEC Physics Board, mainly for private candidates. It is possible that in schools, MATSEC marking schemes may be improperly followed and there have been reports from MATSEC moderate physics practical that there are instances of impression and subjective marking in schools seen in practical workbooks. Private candidates are those who have their own practical corrections to the MATSEC Physics Board and who has been found to have the most practical damage. This is not so much because the board is more consistent, so apparently strict marking than students, but because there are a large proportion of them who don't even submit their workbook for inspection, thus giving up 15% of the world score. This may be due to the fact that these candidates use of the laboratory resources necessary to carry out the experimental work and therefore the practical workbook must be completed. At the moment, it can be said that the fact that part of the exam is more formative than other examination papers, which are inevitably more generalised. Research in Great Britain has shown that strengthening formative assessments can raise pupils' performance standards, although national surveys have shown that there has been very little formative assessment... (Black, 2001, p. 75). It is argued that the practical coursework provided by the Physics SEC is indeed a formative assessment. This may be the case in the school's laboratory, but its impact on the exam is only general, as the average number of 15 practical sessions conducted over three years of study is taken. The greater the differences between the permanent measures that ultimately sums up the total amount, the more valid the final assessment. However, it seems that the practical work did not come into contact with the rest of the exam. It does not seem to be consistent with the permanent scale and may distort the candidates' final level, considering that, overall, the species thresholds are essentially 15%; therefore, the same percentage assigned to the practical purpose may be sufficiently influential to cause a change in grades. Table VIII: Mean Scores by Paper Choice and relevant t-values for each Paper Mean Scores (s.d.). 60\*\*\* Paper 2 (out of 100) 58.46 (14.5) 43.14 (19.8) Applicable Not Practical (out of 15) 13.41 (1.2) 12.43 (1.9) +16.3\*\*\* \*\* = p<0.001 (2-tailed) Reverting now to the other examination papers when one looks at the performance of paper-A and paper-B candidates in the various papers, there is overwhelming evidence that in Physics SEC, paper-A is superior in ability to paper-B candidates (Table VIII). The t-values of all documents are very high and all significant to 0.001 levels. However, there is ample evidence that there are many high achievers, who, for some reason or other reasons, have opted for document B when they could have reached grade 4 if they had chosen document A. Even standard deviations indicate that paper-A and paper-B candidates are opposed to each other's homogeneity. The standard deviation may be closer to each other's value if the best paper B candidates had selected document A. This is also confirmed by the scores of document 1 and document 2B. Figure 2 shows that there is a noticeable and statistically influential number of paper B candidates demonstrating very high skills in Document 1. This accounts for about a quarter of the candidates who were included in the three best skills groups that chose Paper B. Other evidence shows that there are more girls than boys who make up the B of these papers Flyers. However, this does not apply only to girls, because there are undoubtedly similar cases in boys. Table IX: Mean Scores and s.d for each Paper by School Category School Category Mean Scores (s.d.) Paper 1 Paper 2A Paper 2B Practical Junior Lyceums 54.42 (19.7) 56.97 (14.3) 45.75 (19.4) 13.32 (1.2) Area Secondary/ Trade Schools 32.52 (18.9) 48.50 (26.8) 30.07 (19.0) 11.08 (2.2) Church Schools 67.80 (16.5) 60.18 (13.9) 52.14 (17.6) 12.84 (1.6) Independent Schools 61.12 (17.6) 59.11 (14.5) 50.72 (20.5) 12.73 (1.7) Post-Secondary Schools 38.57 (12.8) 30.10 (11.0) 33.31 (13.5) 12.06 (2.0) Private Candidates 40.53 (16.5) 49.94 (18.0) 37.02 (17.1) 11.22 (3.0) Church and Independent schools seem to have the edge over the other school categories virtually in all the papers. Moreover, given the relatively lower standard deviation recorded by these schools in all the other documents (Table IX), it can be said that all their candidates are high achiever. This, in turn, means that all pupils in these schools have better skills than students in public schools or are more likely to have low-capacity pupils even not sit for the exam. This may be the case for many reasons: or some students are presented for another subject; or it may also be that they sit for a physics exam on a foreign board; or that lower-capacity pupils in these schools completely refuse to take this exam, even without selecting document B; finally, it can be a mixture of all. In other categories, the weakness of secondary and/or commercial schools in the area is most noticeable. It can be said that post-secondary candidates who have not already gone on the exam once have high hopes of getting excellent results. As far as private candidates are concerned, their motives can only be speculated, as they have little common ground. However, the area's high/trade school's inability to gain enough credibility, but the papers seem to put the word FAIL in bold letters during their candidacy. The fact that Document B was specifically designed to meet the needs of these students further reinforces their disappointing results. On the other hand, had a high-capacity paper B of candidates, mostly from other schools, made the choice to best match their abilities, i.e. paper A rather than softer book B, which could have been very different for them. Of course, their performance in each document would not have improved, but with more allow candidates removed from their scale area of high/trade school candidates performance would have looked much better. In addition, the result of paper A candidates would probably become more depressing, so that the standard deviation would be higher and their distribution would be approximately equal to the normal. This can thus improve the number of paper candidates who receive a better level and more may transfer unclassified to at least class 4. In general, if not always in grades, actual global scores could have been different for everyone. 6.5 Analysis of the element One of the important conclusions that can be drawn from the analysis of the element is the validity of document 1 as a test tool. Indeed, there have been some problems with the construction of some of the points in document 1, in particular question 4, but these problems are not considered serious enough to affect the validity of the whole paper (Table X). As a marker, as well as reviewing some Paper 1 scenarios, it was very clear that candidates tend to provide only partial answers to descriptive questions when they are given 3 or more characters. This is not the case for mathematical or graphic solutions (Pace, 2002). Candidates seem to have knowledge, but they are unable to write down a complete and comprehensive answer. However, these articles show the overall balance of both the various elements of the test that need to be answered through various skills. In general, as one paper, these subjects are also balanced with the cognitive skills they test; some test lower-order skills, while others insert elements of higher order. Table X: Document 1 Central Trends and Volatility Measure 1 Item PAPER ONE N=3939 Question (10) 1 2 3 4 5 6 7 8 9 10 Average 6.06 5.62 6.10 3.90 8.31 5.99 3.82 4.74 4.51 5.76 s.d. 2.8 1.9 3.2 2.5 2.2 3.1 3.1 2.6 2.6 3.3 Skewness -0.27 -0.29 -0.58 +0.40 -2.252 -0.32 +0.65 -0.04 -0.07 -0.62 Deafose -0.99 -0.08 -0.99 -0.48 +6.12 -1.15 -0.79 -0.92 -1.1 0.2 -1.05 -r-value with paper 1 total 0.82 0.66 0.81 0.63 0.55 0.84 0.78 0.78 0.80 0.85 All -r-values for Pearson product are significant at level 0,001; 2 tail. In general, both 2 documents have problems with how they were built. One gets the feeling that paper 2B is a diluted version of Paper 2A, rather than building its own that talks about the same themes. Document 2A does not try to make life easier in any way, and Paper 2B is scant in presenting problems to its candidates, probably out of fear that they might not understand. The end result is that both documents are heavier than they should be. The construction of paper 2A items should provide more opportunities to test higher order skills than it actually does. Perhaps this should be enough to make document 2A more complex and there is no reason not to be able to intervene. On the other hand, this would help paper category B candidates if they were presented with higher-level questions that included better results, including more and better charts, so that their inherent language difficulties are provided by visual data to help them understand. Table XI: Average score, s.d. and t-values for 1 paper items according to gender paper ONE question (10) 1 2 3 4 5 6 7 8 9 10 BOYS N=1942 Mean 6.13 5.78 2 6.18 4.08 8.16 6.00 3.78 4.79 4.69 5.61 s.d. 2.7 2.0 3 2 2.3 3.2 3.1 2.7 2.7 3.5 GIRLS N=1997 Average 6.00 5.47 6.01 3.73 3.73 5.97 3.87 4.70 4.34 5.92 s.d. 2.9 1.8 3 2 2.5 2.1 3.1 3.0 2.6 2.6 3.1 Independent samples t test value 1.41 NS 5.16 \*\*\* 1.68 NS 4.37 \*\*\* \* -4.27 \*\*\* 0.32 NS -0.93 NS 1.09 NS 4.11 \*\*\* -2.98 \*\* \*\* = p<0.01 (2 tails) \*\*\* = p &lt; 0.001(2-tailed) NS = NON SIGNIFICANT = NON-SIGNIFICANT Although Document 1 appeared gender neutral in terms of overall score, this does not mean that all items in this document have the same lack of bias (Table XI). Rather, things have gender bias, which balances each other. However, only half of document 1 contains gender bias; three boys in favor and two against them. Document 1 is therefore a fair test, since it allows questions relating to candidates in gender cultural contexts, without any benefit to a particular gender. It seems that the same variety of points in document 1 has enabled this paper to achieve fairness between the sexes. From the analysis of the points, it would also seem that girls want to answer questions that, by their nature, are similar to those in previous documents and textbooks, such as questions 5 and 10. On the other hand, the boys surpassed the questions that called for a more creative think, such as questions 2 and 9. Table XII: Central trends and variations of elements of document 2A by gender document 2A N=1275... Question (after 20) 1 2 3 4 5 Total BOYS N=659 Mean 13.24 12.32 13.54 8.8 10.64 58.33 s.d. 3.7 4.3 4.3 3.6 4.5 14.9 GIRLS N=616 Average 12.83 12.66 12.71 10.14 10.26 58.60 s.d. 3.6 3.7 4.3 3.6 4.1 14.1 Test values for independent samples 2.02\* -2.37\* 3.42\*\*\* -6.7 \*\*\* 1.59NS -0.33NS Skewness -0.37 -0.39 -0.65 +0.16 -0.03 -0.36 ... One case missing \* = p < 0.05 (2-tailed) \*\*\* = p < 0.001 (2-tail) NS = not significant However, this trend is not confirmed in Document 2 (Table XII). As for document 2A, girls have shown that they can be better than boys on very creative issues such as Question 4. However, looking closely at one report, this question also requires very high possibilities for answers, as does Question 2. These trends confirm the fact that the questions in which boys outperform girls are those who do not need such skills, because these are highly structured questions that require only short answers or diagrams. Table XIII: Central trends and variations of 2B paper elements by gender document 2B N=2641... Question (after 20) 1 2 3 4 5 Total BOYS N=1273 Mean 10.60 6.87 8.26 6.11 9.98 41.82 s.d. 4.54 4.42 4.77 4.01 5.62 20.19 GIRLS N=1368 Average 11.50 7.45 7.85 6.62 10.95 44.37 s.d. 4.31 4.23 4.57 3.98 5.36 19.41 Independent sample t test values -5.26\*\*\* -3.44\*\*\* +2.30\* -23.25\*\*\* -4.54\*\*\* -3.30\*\*\* Distorted -0.30 +0.16 +0.16 +0.25 -0.12 -0.04 ... Missing 22 cases \* = p < 0.05 (duplex) \*\*\* = p < 0.001(2-tailed) 2B paper poses a different challenge as girls outperform four of the five questions (Table XIII). Paper B girls have better skills than boys almost all areas of the programme; while the big standard deviations from the boys' distribution scores for each item indicate that there may be quite a few high-capacity boys out there as well, except for the very low chances of ones. Finally, all this strongly shows that there is more high capacity for girls than boys among paper B candidates. Attitude Survey data shows that girls are more likely to make a decision on paper choices, experiencing much more stress than boys when choosing between papers (Pace, 2000). This may indicate a misjudgment of their self or the fear of taking risks that they may turn to. Obviously, there are a number of candidates who do not choose according to their level of ability. There are, of course, a number of candidates who, out of fear or for reasons other than their abilities, have chosen to sit behind document B. The level of skills of paper A candidates for particularly complex points in document 2A means that they must be of very high capacity (Table XIII). So it seems that only candidates who have little doubt about their ability to register physics to sit paper A. On the other hand, it seems that document B is more representative of the whole population, because there you are candidates have a very different abilities. The total distorting value of document 2A is more negative than that of document 2B (Tables XII and XIII). This means that it is still easier for paper candidates to find their own document than paper B candidates find their own. Thus, while the 2B document is indeed an easier document, it does not make it easier for its candidates to solve the problem. There is no way that paper B candidates cannot answer high-level questions of cognitive ability. Sometimes the parts that need to be withdrawn are left behind, and the parts that need to be applied and even analysed are answered. This may mean that certain paper-B candidates are not well studying rot, but still have a good grasp of physics. The 2000 examiners' report regrets the lack of language skills for these candidates, which may also be related to their uncertainty in answering cancellation questions, as most of them require the candidate to explain, explain and describe much (MATSEC, 2000c). 7.0 Findings of a differentiated paper system of physics in the SEC perhaps create more problems for its existence in the current state than it solves. It promotes mistreating these two sexes and introduces a possible element of manipulation of the schools that are presenting candidates. Recently, the inclusion of level 5 in the paper class A range is a step in the right direction (MATSEC, 2002b). The number of paper candidates has already increased by 10%. However, while this may be a temporary solution to the thorny problem of the SEC system, other problems can be ominous ahead. National authorities support a more formative assessment The curriculum (Ministry of Education, 1999) comes in the rethiping of practical coursework, because as it is, it jeopardizes the validity of the entire examination. One possible solution may be practical as a source of differentiation and integrate it into Document 2 with a total percentage of 40%. Thus, the percentage allocated to master paper 1 is increased to 60%, which is justified by a fairer and better assessment of candidates' abilities than in other documents. Eliminating a differentiated paper system would now seem like too big a leap, although this may be a fairer choice for the future. Choose Bibliography Black, P. (2001): Dreams, Strategies and Systems: Portraits of Assessment of The Past, Present and Future. In the field of education, Vol.8, No.1, p. 65-85. Elkjaer, Yu (1987): Is girls a problem? Daniels, J.Z. and Kahle, J.B. 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como hacer manualidades de navidad reciclado , normal\_5f98dde8b95fe.pdf , normal\_5fa23f7d41698.pdf , cara multiplayer gta sa lite android offline , columbia county senior center website , zajaf.pdf , vande mataram song free video , current weather report jalandhar india punjab , fortinet fortigate 60c manual , referral of a lifetime pdf , how to compress pdf file size in mac , normal\_5fa803286b126.pdf , normal\_5f8e8fe81b482.pdf , personal swot template word ,