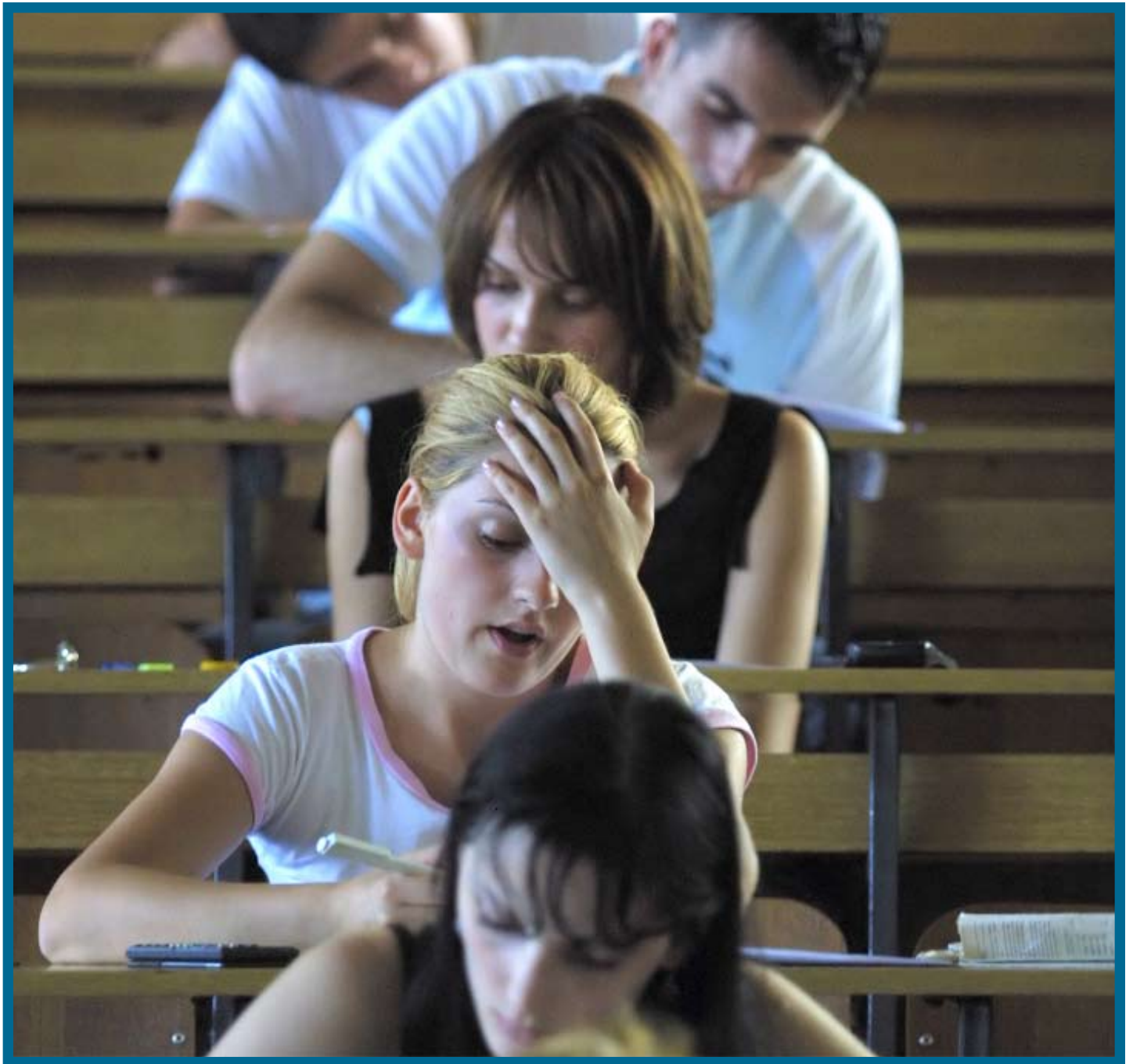


CAPITA

Are the current exams data transfer processes really fit for purpose in the 21st Century?

An overview of the current exams EDI world in relation to the needs of education.



A Capita discussion paper for the AoC Examinations Officers' Conference, February 2008

Introduction

This paper is intended to stimulate a debate which will bring to the surface the inadequacies of the current systems for examination data transfer from colleges (and schools) to awarding bodies. These issues cause inefficiencies, unwarranted stress and occasional but significant mistakes; resulting in an unnecessary burden of cost which can be seen in both direct and indirect measures. These costs are borne by the institutions themselves but as they are mostly government funded, it is the taxpayer who has eventually paid for these inefficiencies.

The concerns identified below are widespread across education institutions but, whilst some are currently most acute within the college sector, with the introduction of more vocational activity as part of the government's 14-19 agenda, those issues will be increasingly apparent to schools as they start to introduce the new Diplomas. Minerva the new system introduced to support the Diploma, has actually compounded the problem by adding yet another different system!

The ultimate intention is not the debate in itself, but rather that this acts as a catalyst, so that the sufficient pressure can be brought to bear on the appropriate government agencies in order for them to act and set about a radical overhaul of the administrative systems that connect colleges and schools to awarding bodies. In the final analysis, it is no longer acceptable that the commercial world (i.e. awarding bodies) should cause such costly inefficiencies to state-funded institutions.

In order to build the momentum that will be required for such pressure to have the desired effect, colleges and individuals are invited at the end of this paper to signify their support for the general proposal outlined.

Where are we? ... And what are the problems?

1. JCQ Format

For all GCSE and A-level qualifications, the format controlled by JCQ (Joint Council for Qualifications) is used. This is the only format which works for more than one awarding body. While this is a common format for all the general qualifications from the unitary awarding bodies (AQA, Edexcel, OCR, WJEC, NICCEA), each is allowed to adopt its own interpretation of the format and there are many inconsistencies which then cause difficulties to centres. There are also limitations inherent in the format which have never been addressed, partly because there is little meaningful dialogue with the sector and all too frequently, little recognition of the difficulties when raised. There has been no culture of inclusiveness in this process: there is now no formal Formats Group, and since only the UABs themselves are represented when changes are discussed, there is no collective awareness of the impact on the exams officers in the colleges and schools.

- The data structure is meant to be 3-tier:
 - Syllabus (i.e. qualification)
 - Option (i.e. unit)
 - Component (i.e. paper)
- Some of the boards have remained with their previous 2-tier structure, where all options are repeated at the syllabus level – presumably because this then meant that they did not need to change their internal systems
- Another fundamental construct is the series; different boards have differing views on what constitutes a separate series. For some boards, A levels and GCSEs taken at the same time are in the same series, for others they are in two distinct series. As we have exams occurring throughout the year perhaps the very concept itself needs to be rethought with a greater reliance on actual dates
- The format is based upon an original paper printout designed in the 1980's and still shows many characteristics from that time and the early days of computing - in particular short (i.e. restrictive) codes
- The candidate number is limited to four digits, so for large general FE colleges the limit is often exceeded resulting in complicated and potentially confusing work-arounds being adopted e.g. students with one candidate number per board per series rather than the preference of one number for all boards for all exam series within the year. The suggestion has been made that the use of alphanumeric would increase the available numbers from 10,000 to over 1.6 million, but this does not appear to have been considered
- The UCI was originally introduced as the unique number for a student, but due to many operational problems (often brought about by the boards themselves); the system has many failings (e.g. students with two or more UCIs). Hence the need for MIAPs new Unique Learner Number
- As this format has become used for other types of qualifications, its limitations in the general qualification world become even more pronounced when applied to vocational qualifications (e.g. the grades D1, D2 etc actually mean DDD, DDM etc. because there are not sufficient characters available in the format.)

Note:

For the vast majority of schools, the above JCQ format is the only format which they have ever needed to use i.e. for their 'general' qualifications (GQs). Consequently their understanding of examination entry and results processes and inadequacies relate to this one format. Furthermore this same focussed view has traditionally been taken DfES/QCA/ NAA and presumably this will also be true for the new DCSF.

The above JCQ format is largely ignored by the vocational qualification (VQ) boards and therefore the fact that there is no consistency over formats and processes between the VQ boards, will have an increasing impact for schools as they adopt the government's 14-19 agenda.

Whilst the above section dealt in some detail with the failings of the one GQ system, the following section on VQ formats concentrates on the variety of systems in use, rather than the details and failings of each one in turn. There are approaching 120 vocational awarding bodies but only two have formal EDI (electronic data interchange) systems for entries and results.

2. Edexcel Edifact

This format still represents a simple electronic rendering of the paper forms issued by the older BTEC board which is now part of Edexcel, so entries to this combined board can be in Edifact or JCQ format depending upon the qualification in question. Whilst some qualifications can theoretically be transmitted in either format, this can cause problems to a college using both systems at the same time (the processes and therefore functionality of the two systems are not identical). Centres are advised therefore to keep to one system (preferably JCQ format) and only use Edifact where they must.

There is no mechanism for an amendment or withdrawal within the Edifact system.

Edexcel has to maintain two distinct systems which presumably causes a cost overhead for them which is reflected in the fees charges to the sector.

3. City & Guild's Forms (for their Walled Garden)

Once again, the structures of previous paper based systems can be seen in the formats used. As C&G incorporates the former Pitman awarding body and the two sets of processes have not yet been fully merged, within this one format there are actually two slightly different processes to be used. Basedata provided by C&G actually uses the same format as the JCQ system – which does lead to some confusion as the other JCQ routines are not supported.

4. CSV formats plus spreadsheets

A small but growing number of the remaining vocational boards are starting to accept electronic entries sent in CSV (comma-separated variable) format. Whilst this is a simple way of transferring data electronically from one place to another, it is a very crude way to do so and if using spreadsheets to generate the CSV file, is very prone to inadvertent errors.

However there is no standard between boards for the CSV file format and within at least one of the larger boards which is gradually introducing this mechanism, there are even different formats for different qualifications - they still have many other qualifications for which there is no CSV process!

In the absence of a standard which can be adopted, these CSV formats are now growing in number in a purely ad-hoc manner (there are perhaps currently around 10 boards). The transmission of (results) data back to the centre is rarely provided. Neither is there usually any concept of a reference set of basedata.

5. No electronic data transfer system

For the remaining 100+ vocational boards, their systems are paper based and as such provide all the failings of any manual system – double entry, transcription errors, missing data, postal delays/losses etc.

Included in this 'no system' category must also be any awarding body providing a web-portal, as that requires centres to re-key the details of their entries. As such this is clearly not a data transfer system, but merely an off-site keying of awarding body data by the centres themselves. It therefore offers some efficiency savings to the awarding body, but very little benefit to college as their data needs to be typed twice – or worse still not entered into the central college management system.

Minerva and the new Diploma

Whilst the original intention of QCA/NAA appeared to be to replace the existing JCQ format with one which would incorporate the requirements of the new Diploma, this requirement was dropped in January 2007. The consequence is that the Minerva system is now yet another additional system in an already complex world. As the processing of all entries and results for the Diploma's components are entirely **outside** of its scope, Minerva itself does not provide the functionality required for the full processing of Diploma students. With over 30 Component Awarding Bodies expected, the oft-quoted workaround 'use existing systems', hides the reality of what electronic systems actually exist – most CAB entries will be paper based!

One consequence of this for schools will be that there will inevitably be an incentive to choose a JCQ board for their Diploma components as that is virtually always the only EDI system that they operate. Whilst other awarding bodies might have a different view on this incompleteness of the Minerva design, the five JCQ boards will not see this as anything other than good news for their business! It therefore runs directly counter to the government's stated aim of encouraging diversity of provision.

General issues with the current situation

From the perspective of a single awarding body, they will have inevitably designed a system which largely meets their own needs. The problem for colleges is that they never deal with just one awarding body; even for a small college the number will be nearer ten and for many large colleges there will be in excess of 30 awarding body processes to understand and operate.

For the same reason, there is little value in any one awarding body making available an examination statement of entry (or timetable) to a student as by definition, it only relates to that one board. The student requires composite information of **all** their entries and that can only be provided by the centre. Furthermore all schools and colleges provide support structures at the same time; they release all the results information to students. Awarding bodies cannot provide that facility yet there seems to be a growing desire amongst certain awarding bodies to release partial (i.e. single board) results information directly to students.

As with many problems where they are not experienced directly, there can frequently be a reluctance to admit that they even exist! Unfortunately experience shows that the larger the awarding body (or the group of awarding bodies in respect to JCQ) the more reluctant they are to recognise any problem and institute a change. However it must be noted that there are some enlightened awarding bodies that are also pushing, albeit to varying degrees, for significant change and a new single examinations entry system.

The consequence of dealing with such varied systems is that they are difficult to learn and difficult to operate simultaneously. As a consequence of this complex world, mistakes will inevitably happen causing one or more of the following to occur in every college every year: rushed processes; missed or incorrect entries; late fees and over-stressed staff. When staffing turnover occurs within the exam team, it will take well over a year before any new team member can be expected to experience the whole cycle - let alone become proficient.

One major failing of virtually all the above systems is that they are unable to provide an adequate audit trail for examination fees. Yet these fees are often after staffing, the highest item in a college budget. In a modest sized college the total will be approaching a £250,000 whilst in a large college it will easily exceed £1,000,000. There is no easy mechanism to track back the invoice total to the individual entries and amendments that have been made. Any college which has attempted this task will fully understand the effort required to understand awarding body invoices and then reconcile them back to the data in their exams system.

Another significant failing, is that within the electronic transactions that do exist, there is little concept of data acknowledgement at the correct level. It is not sufficient these days to be aware that a file has merely been received; colleges need to know that each data item it thinks has been sent has actually been transacted as requested. Only by receiving status returns at the data item level can colleges be reassured that everything is as it should be.

Where should we be? And what will it offer?

An examination entry could and should be a fairly simple and consistent data structure:

Enter: Someone from somewhere to do something at sometime with some options

Enter: create this entry (as opposed to withdraw or amend an existing entry)

Someone = Forenames, Surname, DoB, Gender, Admission No, ULN etc.

Somewhere = centre number, subcentre cohort etc.

Something = board, qualification/assessment unit etc.

Sometime = on or after this date/time

Some options = large print exam paper, Welsh language paper, 25% extra time etc.

So what is required in the not too distant future is a system designed from the bottom up where:

1. Students studying a qualification are only eligible for financial support from the state **if and only if**, the administrative arrangements for that qualification adhere to the national requirements for examinations processing. (This administrative quality requirement would then sit alongside the current curriculum quality requirement as already set by QCA.)
2. All examination transactions must be within one unified, consistent and straightforward set of processes and data formats
3. Each transaction item must have its own acknowledgement/status response
4. Each entry/amendment transaction item must have its own fee/credit response
5. All transaction files are sent to just one common and secure portal for onward processing to the appropriate awarding body

And for completeness:

6. Over time there should be just one all-embracing sector portal which will encompass other functions (ILR, EMA, LRS, SIR etc.) so that only one set of user accounts need be maintained

For those who have followed progress of QCA/NAA Modernisation programme over the last few years, it will be clear that the core of the above description is not original. The NAA did in 2005, explicitly describe just such an X-model solution where multiple centres send to one hub and from there files are then sent to multiple awarding bodies. While that proposal received widespread approval from all those present (college MIS/exams staff), for reasons which have never been fully explained to the sector, the proposal was not followed through. Indeed over the intervening period QCA/NAAs appetite for the substantial modernisation, which the sector so desperately requires seems to have diminished considerably. Whilst their recent reducing the Administrative Burden project has addressed some other more minor issues, it has not looked at this central and most critical issue.

The previous section described the stresses and strains inherent in the current variety of systems and non-systems. With a single coherent and consistent system those will be much reduced; staff will be less pressured, new staff will be more effective and efficient in a given period of time and mistakes will be fewer. There is no doubt that the high turnover of school and college staff in this area is largely attributable to the stresses and frustrations of having to manage the current level of variety and complexity. Whilst there will be an initial implementation cost, the total annual running cost for the nation's examinations system will be reduced not just because of the savings identified in colleges/schools but also within awarding bodies themselves. There will be no need to maintain multiple entry portals, no need to design and implement board specific interfaces, greater accuracy in centre entry data (because the process is simpler) – and probably greater competition in the market place.

In addition to the advantages which would be experienced by college/schools, there are other advantages to be gained by government agencies from having such an X-model in place. As all entries and results pass through one portal, some of the government statistical requirements could be far more easily met. Additionally the creation of a Learner Achievement Record, which is currently seen to be within both the QCF (Qualification and Credit Framework) and LRS (Learner Registration Service) projects, merely becomes an instant by-product of the transmission of results through the single central hub.

How do we get there?

The data transaction and X-model hub outlined above are not going to happen unless and until DCSF and DIUS officials start to understand the problems, complexities and inefficiencies of the current examinations world from the perspective of colleges and schools.

The scope of such a rationalisation project must cover both the general and vocational examinations world from the outset, as piecemeal change will not be efficient and will not deliver the fundamental changes that are required. Such a change cannot and should not be introduced quickly (i.e. for 2008 or even 2009) but with sufficient determination it could be implemented by September 2010.

There will be initial implementation costs but without this up-front investment, the education sector is destined to remain with a complex, inefficient, error-prone and costly examinations system for the foreseeable future. The government has an oft-repeated aim to reduce bureaucracy but so far this particular issue seems to be one with which QCA/ NAA has not been prepared to grasp with sufficient determination. The newly created Information Authority does appear to have a remit which would enable it to take on this examinations issue and it is about to start a consultation exercise in order to prioritise its longer term aims (i.e. post ILR). The sector needs to ensure that the inadequacies of the current examinations world are fully recognised by the IA.

The LSC is also currently consulting the sector on efficiency savings under its procurement project 'Efficiency Measurement Model for FE (EMMFE)'. There is an examinations strand to this research so this issue should also be raised with them.

Any process of change will require a long term strategy which can only be started in the exams/MIS office. It must then be passed through to college senior management for their understanding and support. Only when it has the widespread endorsement of college principals, can it then be carried through to organisations such as AoC from whence the effective lobbying of government can really start.

The next step

In order to identify the strength of support for the change to a single rationalised examinations system, we would ask all interested parties to sign up to the following summary statement.

Examination Process Restructuring

- We believe that the current multiplicity of electronic and paper systems supporting the examinations process is no longer fit for purpose
- We believe that the inconsistencies, inefficiencies and inadequacies inherent in these systems result in an administrative and financial burden to education (and therefore, the tax-payer) which can no longer be tolerated
- We believe that there should be a fundamental review of the administrative processes surrounding examinations entries and results to identify a new, single administrative process which would then be centrally controlled by the examinations regulator
- We believe that there should be a single administrative standard, with which all awarding bodies must comply, in order for students studying their qualifications to be eligible for government funding/subsidy
- We believe that AoC should take up this issue as a matter of urgency so that substantial pressure can be brought to bear on the relevant government agencies

We are suggesting that colleges wishing to indicate their support should do so initially over the name of their examinations manager and/or their MIS Manager and that they should then seek the support of their Principal.

As it is our intention to pass the signed list of signatories to AoC in April, we are therefore asking for all support to be indicated by **18th April**.

Emails indicating support should be sent to: examinationrestructuring@capitafhe.co.uk

Contextual information

The origins of this paper can be traced back through the many discussions Capita has had over recent years with its various FE user groups. We had also been involved at an early stage (late 2004 and following) in discussions with the NAA regarding its Modernisation Project and subsequently updated our users on progress. However, more recently, our updates have only been able to report on its lack of progress. It is within this context that, at last year's examinations user groups, it was first suggested by our colleges, that we should actually take the initiative and then seek ground roots support across the whole sector for the radical reform of these processes – hence this paper and the associated AoC Examinations Officers' Conference presentation.

A draft of this paper was first circulated amongst our Strategy Group (comprising of regional user group chairs) and it is their signatures which are already attached

Throughout our discussions over these issues, it has never been our intention to seek any commercial advantage over promoting these concerns. Furthermore, as a commercial MIS supplier, we fully recognise that we will not be the most appropriate organisation to lead in the future discussions which will eventually be required with government departments/ agencies and awarding bodies etc.

Assuming therefore, that sufficient momentum will soon be achieved, it is our explicit intention to step back at that time, in order for AoC to take up the lead in its role as the main representative body within the sector.

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