

Principal Moderator Feedback

Summer 2010

Applied GCSE

Applied GCSE
Information and Communication Technology (5332)

Unit 2: ICT in Organisations

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General Comments

June 2009 is the sixth moderation session for this unit and it is pleasing to see that the quality of response continues to stabilise and improve. Whilst a few candidates did not apply the necessary skills in the vocational context despite research and investigation, the majority had produced good quality evidence of their ability to apply their knowledge of ICT. There is sound evidence of a good understanding of the specification and its delivery, both on the part of the teachers and the candidates themselves.

Candidates have covered and learnt much about the application of ICT in business and society. The most successful outcomes were in centres where the philosophy of both vocational and independent work has been applied. Candidates who were encouraged to visit organisations produced more comprehensive portfolios. Candidates who had looked outside their school/college environment and had visited real organisations gained significantly higher marks as long as they concentrated on a single system rather than trying to investigate and document the whole organisation. These candidates accessed the higher mark bands because their work demonstrated independently a greater understanding of how ICT was used within the functions of the organisational system. Where candidates chose very narrow or limited systems there was little scope for them to access higher mark bands.

Some candidates were limited in some of their responses by their choice of organisation and subsequent restrictions. This meant that opportunities to describe the technology could not be developed, restricting them to lower mark bands. There were fewer cases of candidates choosing an organisation where it was almost impossible to describe a virtually non-existent usage of ICT.

There were fewer instances of students basing their investigation on two different organisations for Evidence Requirements A and B, which in previous series had led to two disparate reports or a comparison of the two; neither of which enabled the student to achieve higher mark bands. There were fewer incidences of candidates using their work experience placements as a basis for this. Those that did, produced evidence with limited success, since most work experience placements are not a suitable basis for the level of investigation and study required by the qualification.

Centres continue to heed earlier advice that candidates should be guided to choose either a spreadsheet or database solution. This increased candidates' chances of securing higher marks.

The Project

The key focus for this unit is **systems**. Candidates are expected to describe clearly the work of the identified organisation in terms of 3 or 4 of its main functions or systems, preferably in terms of input, processing and output. They should describe fully how ICT is used in Information, Communication and Functional purposes. The ICT system described in Evidence Requirement B should relate to one of the systems identified in Evidence Requirement A. Candidates should consider the 5 main component groups of hardware (input devices, output devices, processors, ports and cables and storage devices) and software and their function within the chosen system. Their descriptions should include technical details of components and explain the purpose of the application software. In some centres, candidates are still producing work for Evidence Requirements A and B together. Unless the particular elements are well signposted, this often causes problems with identifying where the criteria have been met.

Evidence Requirements C and D are about creating a complex system for a specific user and purpose. Complex problems will involve the use of more complex processes associated with the chosen software. This may include importing data from another package or customising the software for ease of use. Databases should be relational, and include searches, sorts and queries (on multiple fields with multiple criteria for the higher mark bands). Candidates may include a user interface such as a menu or switchboard and a mail merge facility based on a query. Spreadsheet systems will include complex formulae and functions, absolute cell referencing, look up tables and macros. The emphasis throughout should be on **'fitness for purpose'**.

Evidence Requirement C focuses on the **design** of the system - the scope of the project, the objectives of the proposed system and draft/final sketches of inputs and outputs that are fit for purpose. In addition, as part of the design process, candidates should consider which parts of the system will be tested and how, documenting this in a test plan. The focus for Evidence Requirement D is **implementation**. Here candidates should provide full details of how they implemented their designs, how these designs were tested using the plan from Evidence Requirement C, the outcomes of the testing and how they have used the results to modify or improve the initial designs.

The evaluation should consider weaknesses as well as strengths of the system and, to access higher mark bands, candidates should document how the system could be improved. The user guide should be detailed enough for an inexperienced user and should include instructions on how to load the system, add, enter and manipulate data and how to troubleshoot basic problems. The user guide should be about using the system and not the application.

Evidence Requirement A

Most candidates were able to describe an organisation, identify its main purposes and describe how those purposes used ICT. Some candidates did not achieve the higher mark bands because they were not able to directly link and explain how the use of ICT helped the organisation to achieve its stated purposes, aims or objectives. Many candidates were able to identify the organisation's purposes, aims or objectives in their introductions, which made it easier for them to evaluate since they could refer back to them when explaining the organisation's use of ICT.

Where candidates investigate an organisation, either as part of a formal group or independently, they should be thoroughly prepared for the visit. This can be done through web based research, letters to the company and brainstorming in the classroom. It was pleasing to see some centres used a range of organisations, expanding the candidates' experiences and allowing the student to focus on one of them for the purpose of Evidence Requirements A and B. Some organisations chosen did not include a suitable range of functions and ICT, e.g. a nightclub.

Candidates that had selected their centre as the basis for study demonstrated a lack of detail, as there was simply too little scope in terms of a range of functions. In other cases, those studying other companies gathered the basic information but lacked evidence when it came to the organisation and its purposes, aims or objectives. It is not sufficient to state these alone, they must be linked to the ICT used to perform or support the related functions.

Candidates who just achieved the highest mark band did so on the strength of one evaluative statement only as long as they had given sufficient detail on which it could be based. Generally, candidates at centres, which organised visits/guest speakers, were able to describe in greater depth and with insight the technologies used, enabling them to achieve the higher mark bands because they were able to describe an ICT system fully. Candidates who worked from case studies found it much harder to identify an ICT system and often described a basic system that could have existed anywhere.

Candidates who failed to reach the middle mark range usually failed to identify a wide enough range of purpose or did not explain how ICT was used, e.g. they explained the finance function but did not clearly describe how the ICT was used within that function. Candidates who structured their research into Functions (purchasing, sales, finance, distribution, human resources, etc), tended to score well. This approach showed a greater understanding of how ICT was used and how the organisation functioned as a whole.

Where candidates had used the Internet for research into their chosen organisation (whether an actual visit had taken place or case study had been used) there was clear evidence of copying and pasting from the website, but this had not been credited in a reference or bibliography. Evidence from candidates who had not had an opportunity to visit a 'live' organisation showed a lack of understanding.

Evidence Requirement B

In this component, candidates addressed most key component groups and actually linked them to the purposes within the chosen system. However, this was not always the case. Some candidates had managed to include images of the actual hardware within the organisation and this formed a useful adjunct to their written descriptions. However, in some cases, candidates had not identified a single system within the organisation and concentrated solely on the hardware and software of the organisation or discussed the organisation as a whole. There was often a generic list of components, but no detailed information given on their use in the chosen organisation, e.g. where, when and by whom and how this linked to the objectives.

One of the main reasons why candidates failed to gain high marks was because they had not covered all of the 5 component groups (input, output, processor, ports/cables and storage) and software. Categorisation of the components almost always achieved higher marks. Ports and cables was the most frequently omitted component and where it was included, candidates showed little knowledge. Some candidates remain confused about the difference between processors and processing - explaining how the data was processed rather than giving technical details of the actual processor used (its speed, type etc). Those missing out a component group did not move beyond the lowest mark band. Higher mark bands required the student to evaluate the extent to which at least one component or some software meet the organisation's purpose. Many candidates found this difficult and relied on descriptions of the component's use rather than exploring its limitations or alternatives. In a few cases, candidates made recommendations about what an organisation could use which is not required.

Overview of Evidence Requirements C and D

Many candidates produced a wide range of interesting and innovative applications for Evidence Requirements C and D. Candidates who used real problems benefited over many of those using case studies because of the opportunity to clarify the problem. Identification of the inputs, processes and outputs is essential if candidates are to be able to break the proposed solution down into logical steps.

There were many more instances of before and after screen shots to substantiate the testing. User Documentation was much improved, although some was simply a restatement of some of the "testing" that had gone on. Evaluations, whilst much improved over last year, varied from peer questionnaires to single sentences. This series, there was an increased range of ideas from centres accompanied by some robust design sketches of both inputs and outputs. However, centres are reminded that they must choose a single mark band within the Unit Marking Guide, which should reflect the independence of the work and the complexity of the solution.

Evidence Requirement C

Candidates were required to provide some indication of the scope or purpose of the solution with objectives. In order to gain 2 marks here, the description should be detailed enough for a third party to understand. Objectives were well constructed which made it easier to assess the extent to which their eventual solution met its original purpose, and aided the candidate in identifying associated performance indicators.

As a result of their focus on the design elements and the greater choice of solutions based on spreadsheets and databases, some candidates were able to achieve the highest mark band in these components. Some centres had not fully understood the meaning of independent solution to the problem and there were cases of differentiation occurring only as a result of using a different name for the organisation, business or company for which the system was being created. Fewer centres relied on the video database example from the teacher guide. Centres that had designed their own assignments still gave candidates too much structure by indicating that a database was required or giving too much information about the problem. As a result, candidates were not able to define the scope of the problem themselves and were not able to choose the appropriate software for themselves, thus limiting the candidates to the middle mark band. In some portfolios, there was clear evidence of the use of scaffolding and structured templates to document the proposed solution, especially where candidates had omitted to delete 'instructions'.

Most candidates, who qualified for higher mark bands on independence and complexity, did not achieve all the marks because elements of the design were missing. Some credit was often applied retrospectively from Evidence Requirement D. Candidates submitted copies of tables from databases already created to show table design rather than annotated sketches. This indicated that candidates had implemented first, and then reverted to the design stage. In this section some candidates had included screen shots of the final implemented solution as design evidence, and as such could not be awarded marks for these. Those gaining the highest marks in Evidence Requirement C produced handwritten drafts of input screens and output screens. Some innovative candidates had also used a bitmap application to draw and design their planned screens and indicated processes with handwritten relationship diagrams or examples of formulae to be used. Candidates had put more effort into the design steps, in that these were detailed and could in many more instances support third party implementation.

Many candidates provided test plans, which ranged from a simple statement of intention to a detailed grid. Test plans were often only included in the implementation section of the project, and not as a separate plan. Candidates still need to develop their ability to identify abnormal or extreme data as part of the testing procedure, which is expected at the higher mark band. Most candidates also provided lists of hardware and software, but referred to packages such as Excel or Access rather than a generic type of software application. A few had actually discussed the pros and cons of each software type in terms of their propose solution.

The majority of centres managed to use complex processing and more produced a complex solution. However, some candidates were able to produce a basic spreadsheet or database (with some advanced features incorporated into them) but few of these had any idea as to what they were actually doing or why, which is linked to the lack of detail when describing the scope of the project. There was also a lack

of evidence (e.g. witness statements within the Unit Marking Guide) that the work had been carried out independently.

Evidence Requirement D

Most candidates provided evidence of implementation, testing, evaluation and some user information. Marks for implementation related to the objectives outlined in Evidence Requirement C. Candidates lost marks where objectives were difficult to identify. The better solutions had clear objectives, which were then reflected in the implementation and evaluation. Most candidates' solutions included complex processing. Test plans were not always accompanied by suitable evidence as to whether the test was or was not successful. Fewer candidates attempted a complex solution that they were unable to achieve successfully.

Most candidates undertook some form of testing. Candidates gained higher marks when they had made some constructive use of the results. Some candidates achieved lower marks as they used their test plan as a checklist and did not describe or use the results in any way. Evidence in the form of before and after screen shots enabled the candidates to make constructive use of the testing process.

Most candidates evaluated their solutions to some extent. A significant number lost out on higher marks because they evaluated how well they had approached and completed the task rather than evaluating the usability of their system. The better evaluations listed strengths and weaknesses of the system and then indicated areas for improvements with some indication of how these could be achieved. Evaluation was sometimes robust - with candidates discussing the strengths and weaknesses but areas for improvement were not valid or fully considered. It was pleasing to see some had evidence from an end-user as to how they regarded the final solution.

Some user guides were of very good quality. The best guides were clear and well laid out with a contents page, screen shots of the actual screens and troubleshooting. Fewer user guides focused on how to implement the system, rather than acting as a guide on how to use the system. Some guides, showed the user how to create the system for themselves, and these were complicated and not meaningful. Many guides were focused on users of ICT rather than the novice, making them less helpful and instructive.

Where candidates failed to achieve higher marks, it was because not all elements - construction, testing, user guide and evaluation - were completed. Many assumed implementation stages with finished forms and reports, but provided no evidence of actual construction to show skills and understanding of the software capability. There was some evidence of good solutions, but the lack of annotation and inadequate testing lost these candidates valuable marks.

Statistics

Unit Results

Grade	Max Mark	A*	A	B	C	D	E	F	G
Raw boundary mark	58	57	50	42	35	29	23	17	11
Uniform boundary mark	100	90	80	70	60	50	40	30	20

Qualification Results

Grade	A*A*	A*A	AA	AB	BB	BC	CC	CD	DD	DE	EE	EF	FF	FG	GG
Uniform Mark Boundaries	270	255	240	225	210	195	180	165	150	135	120	105	90	75	60

Notes

Maximum marks (raw): The marks corresponding to the sum total of the marks available.

Boundary mark: The minimum mark required by a candidate to qualify for a given grade.

Grade boundaries may vary from year to year and from subject to subject depending on the demands of the question paper.

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