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General Certificate of Education

Applied Information and Communication Technology 8751/8753/8756/8759

Report on the Examination

2006 examination – June series

- 8751   Advanced Subsidiary
- 8753   Advanced Subsidiary (Double Award)
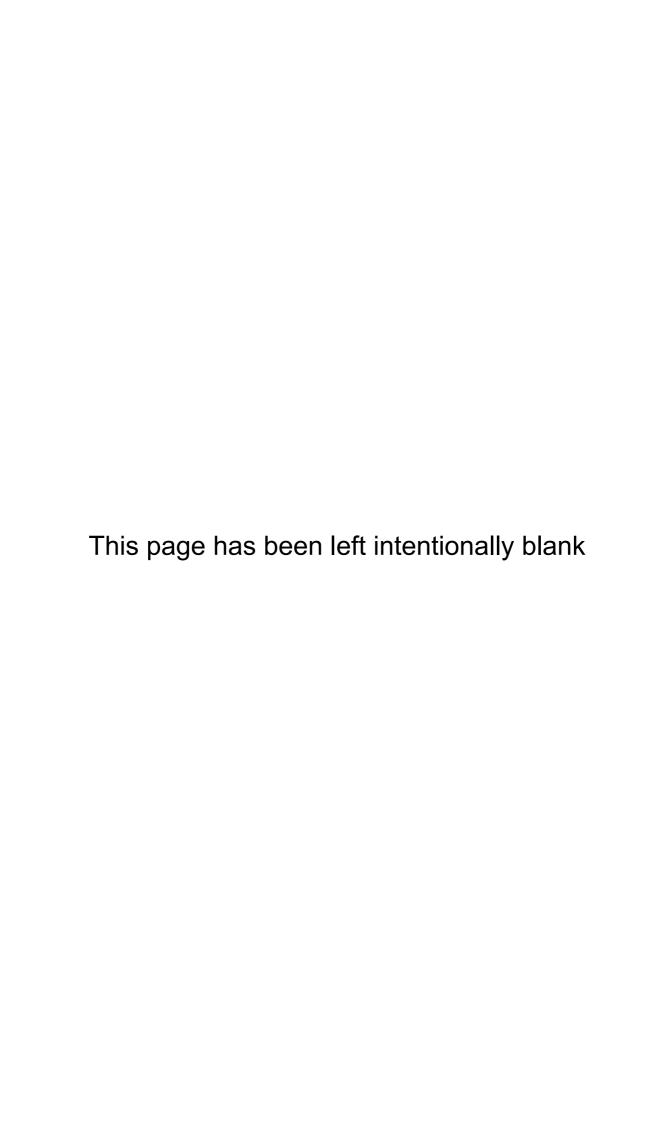- 8756   Advanced
- 8759   Advanced (Double Award)

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Contents

GCE Applied Information and Communication Technology

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GCE Applied
Information & Communication Technology

Externally Assessed Unit

Unit 1: ICT and Society (IT01)

This was the second series for the examination of this unit. The format of the examination is an AQA-set assignment, for which candidates are allowed time for research and initial development work (the investigation time), then a period of controlled conditions during which candidates are expected to produce the final product and an evaluation of the product and their own performance.

General Comments

It was pleasing to note that the standard appeared to have improved since January as centres followed advice given in the previous report. As in the January series, it was clear that many candidates gained more than just ICT knowledge and experience when carrying out the tasks in this examination. Many candidates had undertaken substantial research into travelling abroad and also had learned a lot about the requirements of young people with limited mobility. Candidates appeared to have enjoyed the task, producing a variety of interesting newsletters that were very appropriate for the target audience in their content, language and layout.

Whilst the standard of many newsletters submitted was high, it was noted that many candidates submitted large quantities of irrelevant material in the form of catalogues, whole website print offs and multiple copies of questionnaires. These were not able to gain any marks as they do not meet any of the assessment criteria and only added to the postage costs for Centres. Candidates should be made aware that the purpose of the bibliography that is required is to reference such material and that it should not be included in future submissions.

Centres are again asked not to use plastic wallets and other binders for work submitted. All work submitted should be held together securely by a single loose treasury tag that allows examiners easy access to all the pages submitted.

Centres should remind candidates to number the pages before the work is submitted. It was pleasing to note that in this series the majority of candidates submitted their work in the order that the tasks were set out in the Candidate Booklet. This made it easy for the examiners to find the evidence.   Candidates should be encouraged also to label each section clearly so that it is obvious what each piece of work is. Sometimes the lack of labelling meant that it was very difficult to know, for example, which were draft and final designs. In these cases examiners had to use their judgement to determine which was what.

Design work was often very poorly annotated and explained. Many candidates had included design work that was only labelled with basic items (image, textbox). Better candidates made full annotation of all features, including details (e.g. font style, size and colour) and all necessary measurements, as well as explaining how their designs were appropriate for the target audience. These candidates also used a wide range of features in their designs. Centres are reminded that these designs should be hand-drawn or drafted on a word-processor and NOT be duplicates of templates or newsletters produced in the software used for the final implementation.

A few Centres appeared to have provided more help than appropriate in the investigation time. Although it is expected that centres should guide their pupils, the use of very detailed templates for such things as time plans and bibliographies may lead to candidates submitting work that is essentially not their own and not being awarded marks as a result.

A disturbing number of candidates reported in their evaluations that they had had no training in the software they used for the final newsletter. For many they had appeared to have used the software for the first time in the examination room. Such candidates would not have been able to perform to the best of their ability.

The Task

The task given for this examination series was to design and produce a newsletter for the target audience of young people travelling abroad. The purpose was to inform them of the effects that ICT is having on society. Candidates were required to include details of one piece of ICT-related legislation which could affect the target audience and to give five examples of the use of ICT for different purposes, one of which should be related to young people with a limited mobility.

A significant number of candidates appeared to forget the requirement to explain the use of ICT and produced very colourful and interesting newsletters that earned very few marks, as they did not relate to the task set.

Items (a) to (o) in the Candidate Booklet set out details of what candidates should hand in. The process that candidates were expected to go through was as follows:

Candidates should have started by planning how to break down the overall task into chunks and planning their time in order to ensure that they completed everything within the overall time allowed.

Candidates should then carry out research into their target audience, in order to ascertain what their needs are. This should influence the design and layout of the newsletter, as well as influencing the likely content. Research should be carried out in order to gather information and relevant pictures that will form the content of the newsletter. The results will be gathered into plain text and image files ready in the controlled conditions. Candidates should not forget that the content must be concerned with the use of ICT, that it should be accurate and relevant to the target audience.

As the research is being conducted, the candidates should form a bibliography, in the format suggested in the Candidate Booklet.

Once the research has been completed, the candidates should determine criteria that will allow them to evaluate the final version of their newsletter. The criteria should be informed by their research and by the requirements of the task, but should not be a simple restatement of the requirements of the task.

Several alternative designs should then be produced by hand. These rough drafts should include sufficient detail for the target audience to be able to comment on their suitability. The candidates should record how they carried out the testing as well as the results.

A final design should be created, on which the implementation of the newsletter will be based. The candidate should annotate this design to show its features, including accurate dimensions, so that a third party could implement the newsletter from this design. The annotations should explain why and how it is appropriate for the target audience. The annotations should also show where all content is going to be inserted, with reference to the information stored in the research files.

At the end of the investigation time candidates should submit all work for items (a) to (h) plus the research text and images in electronic format, to their teacher. Text should ONLY be submitted as **basic text files**. Word-processor and similar files are NOT acceptable because these may contain formatting that should be carried out under controlled conditions. Basic text files normally have a '.txt' filename extension and are normally created in a software package such as Notepad, or saved from a word-processing package as a plain text file.

During the controlled conditions, candidates should create the template for the implementation of the newsletter. The template should be printed out and annotated to show the features of the software that have been used in creating it, such as text boxes, drawing tools and so on.

Candidates should then show how the newsletter is constructed, through a series of screen shots that illustrate how and where content has been inserted and how the newsletter was refined, e.g. by rejecting or enhancing certain parts. How problems were solved should also be recorded by the use of 'before' and 'after' **annotated** screen shots. These screen shots will also be useful in the evaluation of the candidate's own performance.

Once the newsletter has been constructed, the candidate should evaluate it using the criteria that were originally set.

The candidate should also evaluate their own performance, using their original time plan, their amended time plan and screen shots of the newsletter construction.

Items (a) to (h) should be produced during the investigation time; items (i) to (o) during controlled conditions.

Items (a) and (n)
A small number of candidates who had attempted this section scored no marks as they had failed to put in any dates. Most candidates gained the first mark and a significant number gained two. This was best done using a time plan, or a dated task list, that showed dates when the candidate planned to carry out a task, with a column to show actual dates, which was filled in when the task was carried out. The best plans then included a column for monitoring comments explaining the reasons for changes that were made. The third mark was awarded to few candidates, as few had recorded monitoring comments, or had instead given a description of the work done. Comments such as "done" or "no changes" are not sufficient for the third mark; for this third mark comments must explain the reasons for missed deadlines, or show that the candidate has adapted the work plan as a result of changes that they have made to it. A few candidates lost marks by submitting a time plan for one part (the investigation time) and a work record for the other (the controlled conditions). This could only gain 1 mark in total.

Item (b)
In some centres candidates had carried out good research. Many had produced questionnaires for their target audience and gained much useful information about their needs and experiences. This was then summarised and the implications for their newsletter designs and content discussed. Many others, however, failed even to state or explain who the target audience was and did little or nothing with their questionnaires apart from including multiple copies without explanation. Where the questionnaires themselves also had no stated purpose it was not possible to award any marks for this item. Higher scoring candidates summarised their results and explained how they would use them in their newsletters. Copies of all completed questionnaires are **not required and should not be included in the work submitted**. Candidates may provide evidence of their research by using a single example of their questionnaire and a summary of results.

Although candidates were generally part of the target audience many had also interviewed people of their own age or slightly older and this gave them valuable information about requirements for the newsletter

layout and content. Most candidates had also carried out extensive research via the Internet and some had looked at catalogues, TV, magazines and articles. The majority appeared to have enjoyed the research and gained much knowledge from that and the interviews.

Item (c)
The evaluation criteria should enable the candidates to assess the newsletter's suitability for purpose and audience. Criteria should be both qualitative and quantitative. To gain full marks candidates should also explain how they derived the criteria.

This task was still done very badly by the majority of candidates. As in January, many candidates had included criteria which did not meet the requirements because they were derived by rewording either the task, as written in the Candidate Booklet, or by rewording the items from the 'What you should hand in' section of the Candidate Booklet. Many just submitted a list of tasks to be done.

Better candidates had used their research for item (b) to create criteria that then enabled them to assess the suitability of the content, design and layout in terms of the newsletter's purpose and audience in their evaluations. These candidates clearly cross-referenced the criteria to their research.

Item (d)
The bibliography is used to reference all the research so that bulky extracts are NOT included. A high proportion of candidates failed to understand this and included brochures and printed copies of websites which are not required. Such materials do not gain any additional marks and only add to the cost of postage for the Centre.

The Candidate Booklet gave examples of how various sources should be referenced in a bibliography. Candidates that followed this gained an additional mark.

Candidates should be encouraged to use a wide range of sources, which may include printed material, video material and electronic sources such as the Internet.

Some very good bibliographies were seen, with a wide range of sources quoted, indicating that considerable effort had gone into the research. More candidates had used printed or other types of sources as well as large numbers of Internet sources, so gaining more marks. Weaker candidates used only Internet sources.

A few candidates did not list their sources at all, or had only made reference to search engines on the Internet. These candidates gained no marks.

Item (e)
Candidates were expected to include no more than three different draft designs that could be tested for suitability with the target audience. These draft designs should be sufficiently detailed to enable the target audience to make a choice about layout and content. This may be achieved through annotation of the drawn designs. The annotations should explain why the different designs are suitable for the target audience.

Most candidates had included at least one draft design, though generally the designs were badly executed with no real annotation. Many designs showed little apart from the general layout of text areas and pictures, with some indication of colour or font size. Many candidates drew designs that only showed text and images areas, so gaining very few marks.

It is sufficient to draw the draft designs neatly by hand, though some candidates had used drawing tools to show the layout of pages and annotated them by hand. Where software is used to draw the designs, the

candidate should state what software is used. Candidates should be discouraged from using the software that they will use for the final newsletter.

Draft designs should be clearly labelled as such. In some cases it was not possible to tell which the draft designs were and which the final design was.

Some candidates had included no draft designs at all.

Item (f)
Candidates were expected to test their draft designs for suitability for the target audience. The better candidates showed them to a sample of their target audience and recorded the feedback. Most candidates provided strong evidence of having done this well, with the better candidates using this information to prepare their final design and including it in their annotations.

A large number of candidates asked their target audience to choose from two or three designs and then explained and summarised their findings.

Many candidates included large numbers of questionnaires that had been used to test their designs. Again, it is not necessary to include these and candidates should be discouraged from doing so.

A few appeared to test their finished newsletters and not their draft designs. Centres should be aware that candidates are not allowed to take the final implementation out of the controlled conditions and that this may be regarded as malpractice.

Item (g)
The final design should be sufficiently detailed that a competent third party could implement it with no additional detail. It should contain details of measurements, layout and content as well as colours, sizes and types of fonts. The annotations should also explain the features of the design and why they are suitable for the audience and purpose, for example by using a large font size to make text clear or using a table to make information easily accessible. More marks are awarded to those candidates showing a wider range of features than just basic layouts of text and images. If candidates draw designs to scale this should be clearly stated on their work.

An annotated hand-drawn design is perfectly adequate, though the design may also be produced using a software application. Where a software application is used, the application should be clearly named. The candidate should not use the same application that they will be using to carry out the implementation.

It must be stressed that the designs are created in the INVESTIGATION TIME. Some candidates had printed out their template and annotated this as their final design. Others had included draft newsletters in this section. The final design should not be confused with any work that the candidate creates in the controlled conditions time.

There were a very few excellent examples. Some candidates had produced very detailed design work, but not enough of these had annotated the design in sufficient detail to gain the full marks. Most candidates had annotated details of fonts and font sizes, with some measurements but very few produced a design that could have been implemented by a third party.

Item (h)
Once research has been undertaken, candidates should have a number of files containing the text and pictures that they intend to use in their newsletter. The text files should be in plain text (ASCII text) with no formatting. Microsoft Word document files (.doc) and rich text files (.rtf), or other word-processed files are not acceptable formats. Candidates should take a screen shot that clearly shows the folder contents with all the files that will be used during controlled conditions.

Many candidates had provided screen shots of their files. A few candidates misunderstood the instructions and printed the contents of their research documents, which was not required. A significant number had included formatted text files, which are not acceptable.

Item (i)
From the final design, candidates should use appropriate software to produce the template for their newsletter. This should be printed out (screen shots may be used) and annotated to show the features such as page sizes, margins, tables and so on. Further annotation should demonstrate that features of the software have been used, for example to change fonts, create tables, produce numbered lists etc.

To gain the maximum marks candidates should also explain why they have used these features in the context of the target audience and purpose of the newsletter.

A significant number of candidates did not provide evidence of creating a template. There was evidence that a large number of candidates did not understand the purpose of a template and how it should be used. Many other candidates annotated print outs or screen shots of standard templates provided by the software application, rather than creating a template or giving evidence of significant adaptation. These candidates gained no or very few marks on this item.

Most candidates who did provide evidence did not explain many of the features, though some others did this very well.

Item (j)
Candidates should produce screen shots of their work, showing how the newsletter was composed and developed, including items that were enhanced or rejected. The screen shots should be annotated to cross-reference the content to the files of researched material.

Many candidates provided extensive records of development. Most candidates had produced screen shots of their newsletter as it was being developed. However, a few did not annotate the screen shots at all.

A high number of candidates produced good evidence of the development of their newsletters with the better ones showing enhancements, which they justified, and gained maximum marks. However a significant number of these did not show how the content was related to the files of research material. Many of those who did reference their content gained high marks as they made it clear which text files were used in each section of the newsletter, as well as showing the file names of their images.

Item (k)
Many candidates gained high marks on this section, for which there were twenty four available. Marks are awarded for the content of the newsletter.

Six examples were asked for, one relating to legislation that affected the target audience, four that showed how ICT is used for different purposes and one that is directly related to young people who have limited mobility.

For each of the examples, one mark was given if the example was relevant, one mark if the detail given was factually correct, one mark if the candidate had shown the advantages and disadvantages of the example to the target audience and a fourth mark if the example was cross referenced to the research done.

A common mistake was to concentrate on devices etc such as laptops, mobile phones, PDA's and Internet cafés rather than the **uses of ICT.** In such cases the actual use of ICT was often very sketchily described

and repeated for each device. Weaker candidates also assumed the audience's knowledge and gave inadequate descriptions of the uses.

The standard of writing and creativity seen in the newsletters was particularly pleasing. Candidates had generally tried hard to appeal to their target audience and some informative and entertaining copies were seen. Both content and layout were often very creative, with relevant text and positive images of the target audience. Some excellent examples that were clear and held the audience's attention were seen.

Many candidates had explained the Data Protection Act, The Computer Misuse Act or the Copyright, Design and Patents Act for their examples of legislation and most were able to indicate how these would affect the target audience of young people travelling abroad.

A wide range of examples of the use of ICT was seen, amongst the most popular being online holiday bookings and research, email and messaging and the **use** of ICT devices such as satellite navigation systems and digital photography. Many of the examples were well explained and factually correct. Most candidates were able to explain the benefits or drawbacks to the target audience. More gained the fourth mark for each example, by referring to their research source, or by indicating that further information could be obtained from particular sources.

A significant number of candidates forgot their main topic was the use of ICT for their target audience and wasted much time and newsletter space on producing travel brochures including general travel articles that gained them no marks.

Most candidates included an example of the use of ICT that could be directly related to a group of people with limited mobility, mainly by explaining the convenience of online holiday bookings or carrying out research on travelling with special needs. The better candidates were able to relate well to the needs of such young people and appeared to have gained a lot of understanding of their situation.

One common error was to describe wheelchairs and artificial limbs as an example of ICT, though they are in fact an example of technology. Other candidates mentioned hearing loops, speech synthesisers and other devices and uses that were irrelevant to the situation. No marks could be awarded for these. Limited marks were awarded where the wheelchair had a significant electronic response in terms of providing the user with feedback described.

Some candidates included many more examples than were required. In these cases, credit was given for the examples that would gain the most marks.

Item (l)
The evaluation of the newsletter should have been influenced by the criteria that had been set prior to controlled conditions but in many cases this did not happen and candidates missed vital points. Candidates with weak criteria also produced weak evaluations. A significant number of candidates misdirected their time by producing long evaluations that mainly ignored the newsletter itself.

However, a substantial number of candidates gained full marks by explaining how their newsletter met the original criteria and how the newsletter was suitable for purpose and the target audience. This was done by reference to their original criteria and by discussion of the content and design.

The majority of candidates gained two marks for showing why the newsletter was suitable for purpose and audience. Better candidates who did not refer to their evaluation criteria often missed the third mark.

Item (m)
In the evaluation of their own performance, candidates should make reference to their time plan and any significant changes that they had to make to it. They should also make reference to their own use of ICT

in creating the newsletter and how they overcame any problems that occurred. This should be illustrated by screen shots, preferably those used in section (j).

The majority of candidates gave a brief description of their own performance, gaining 1 of the 3 marks available. Many candidates gained one mark for comments about spending too much time on a task, or using the Internet to find research materials. A significant number used screen shots, or referred to those created for item (j) to explain how problems were overcome.

Few candidates provided detailed explanations, cross referenced to their time plan and the development of the newsletter, which would have gained the third mark.

Item (n) – see (a) and (n)

Item (o)
Candidates were expected to provide a second list of files – those actually used during controlled conditions. If this list of files was different from those in item (h), either because research material had not been used, or because research material had been added to the original list, then these changes should be annotated to show the changes and why they had been made.

Most candidates listed the files actually used and the majority of these annotated them to show the changes made.

It was not clear, in a few portfolios, which was the list provided for item (h) and which was provided for item (o), particularly where the lists were identical. Both lists should be clearly labelled. If the candidate has made no changes to the list of files, then this should be stated.

Portfolio Units

General Comments

This was the first Moderation series for all Centre-assessed coursework units at AS for this new specification. The quality of work submitted for all units varied in quality and presentation, with some high quality work seen in all units and some work achieving nearly maximum marks. It was also clear that many candidates had enjoyed the work that they were doing and this was shown in the imaginative portfolios that were produced.

The nature of an applied specification, which is different from the previous vocational specification (AVCE), presents some unique challenges to teaching staff. It was pleasing to see that many centres had embraced an approach which set the learning in a real-world context and engaged the candidates in producing real work for real clients. In addition, some centres that had difficulty in engaging real clients had developed realistic scenarios for their candidates which gave them no indication that the client was not real.

Portfolio presentation

The perfect portfolio is one that presents the candidates work in a logical sequence, with each page numbered sequentially, secured with one or more treasury tags. If it is deemed necessary the portfolio can then be placed in a card folder or card envelope for protection. This makes the moderation, and marking, process very easy.

Many centres provided securely bound portfolios of work, though few were page numbered. Unfortunately many more presented work in inappropriate bindings such as plastic wallets and ring binders. These make it much more likely that pages will become detached from the rest during posting and moderation.

Documentation

Each portfolio should have a Candidate Record Form securely attached to it, completed by the candidate and by the teacher. The majority of portfolios did have, but a significant number had these forms incorrectly completed. In most of these instances the form had been signed by the candidate but not countersigned by the teacher, or did not have the marks for the Unit recorded. This is an important document needed to prove that the work is the candidates own and centres are reminded to refer to the guidance on such issues provided by the JCQ as well as AQA.

Each Unit must have a Centre Declaration Sheet, completed by all the assessors for that Unit and by the Head of Centre. This must be submitted with the sample of work sent to the Moderator. Again, most centres did include this but a substantial number needed to be reminded by the Moderator. Centres should be aware that failure to submit the Centre Declaration Sheet, duly completed, may result in all candidates for that Unit receiving zero marks.

Centre Mark Sheets should be completed and pink and yellow copies submitted to the Moderator by May 15th. A small number of Centres did not submit these on time. In a few cases Moderators also noticed some substantial differences between the marks recorded on the Candidate Record Form and the Centre Mark Sheet.

Use of AQA Marking Grids to record assessment decisions

AQA has devised Marking Grids for each of the Centre-assessed units to allow assessors to systematically assess the work of candidates and to record their assessment decisions. These grids are amended from time to time and Centres should ensure that they are using the latest version (the latest version is the one published on the AQA website).

Many Centres had adopted these Marking Grids and had included them with the submitted portfolios. Other Centres had devised their own Marking Grids or devices that were based on them. In some cases the centre-devised grids contained errors, such as incorrect interpretation of the assessment requirements, or transcription errors, that could lead to incorrect assessment decisions.

Whilst there is no requirement to use the AQA Marking Grids, it is recommended that Centres do so. The Marking Grids have a space for page numbers to be added by the assessor to note where criteria have been met. Each row of the grid also has a space for a total and each Assessment Objective has a space for a subtotal. These subtotals should be transferred to the summary and a mark for the unit recorded.

It is important to note that each row on the Marking Grid should be used from left to right. Only if the cell on the extreme left has been fully satisfied should the assessor move to the next cell in the row. If the assessment requirement for a cell has not been fully satisfied then no more marks may be awarded on that row.

It was observed during Moderation that where Centres had used Marking Grids and included page references, the assessment was much more likely to be accurate. Where Marking Grids had been used, but no page references were included, assessment tended to be much less accurate and was often very lenient. The use of page numbers also allowed the Moderators to find the relevant evidence much more quickly. Where page numbers were not included the process tended to be re-marking rather than Moderating.

Standard Ways of Working

Standard ways of working is assessed in each unit, with an emphasis that is appropriate to that unit. So, for example, in Unit IT02 it is assessed through the actions the candidate takes to ensure compliance with copyright. In Unit IT04 it is assessed through the actions that the candidate takes to ensure that they comply with safety procedures necessary when working with static-sensitive and electrical equipment.

Many candidates included virtually identical sections labelled 'Standard Ways of Working' that included VDU regulations, details of backups, file naming conventions and so on in each of the units submitted. Although these gained some marks where they met the appropriate criteria for the individual units, much of the content gained no marks at all.

Training courses

A large number of Teacher Support Meetings was held during the year. Whilst these were generally well-supported, many Centres did not send representatives. It was clear, during Moderation that most Centres who had attended these meetings were able to meet the requirements of the Specification and its assessment more closely.

Use of real clients during the production of portfolio work

The Specification states that "The fundamental philosophy of this specification is that, in order to understand the nature of Information and Communication Technology, candidates must actively

experience the Information and Communication Technology environment. This can be achieved through a variety of approaches including work experience, links with local employers, case studies and research."

The use of a real client is, therefore, emphasised in the allocation of marks for assessment. In some units candidates have to produce notes from a meeting or briefing with a client, in all they have to describe the clients' organisation and the client needs and for the higher marks, where practical skills are involved, they have to justify or explain what they have done in terms of meeting the needs of the client. In order to do these things the candidates need to have a clear picture of the client and their needs.

There was a clear differentiation between candidates of similar ability who had used a real client and those who had not. Candidates who had the involvement of a real client had a clearer idea of what was required than those who did not. Candidates from Centres who allowed the candidate to be their own client, or who asked them to make up a client, tended to make unrealistic assumptions about what was required and this was reflected in the portfolio of work that was produced. Consequently, this was also reflected in the mark that those candidates achieved. Where candidates had engaged with a real client the portfolio of work often had a narrower focus with the candidate having a clearer idea of how what they produced was meeting the needs stated. This tended to make it easier for those candidates to access the higher marks.

Some Centres, for some units, adopted a compromise approach where the teacher acted as client for a number of candidates who were all working on the same scenario. Again in these cases, candidates tended to make assumptions about what was required but this was not as obvious as when an entirely fictitious client was used. In the best of these cases the candidates thought that they were working with a client who was real, as all communication took place by email, the teacher, who the candidates perceived as the client, responding to each individual as appropriate.

Internal Standardisation

In the samples taken from some Centres there was clear indication that internal standardisation had taken place across groups of assessors for individual units. Where this had not taken place there was occasionally variation in the assessment decisions of different assessors. Centres should be aware that this can lead to adjustment for all candidates for a unit where marks are found to be out of tolerance.

Assessment Objectives

Each Unit is assessed through criteria set within four Assessment Objectives (AO). These are common to all Awarding Bodies specifications for GCE Applied ICT and were set by QCA, as were the weightings for each AO.

AO1 (ICT capability) is generally concerned with assessing the candidate's practical skill in using appropriate software, specified within the unit content, to implement a product for a client. It also assesses the candidate's ability to adhere to standard way of working – this has a different emphasis according to the individual unit.

AO2 (Knowledge and understanding) assesses, within the context of the unit, the candidate's knowledge and understanding of the material relevant to the particular unit, as outlined in the 'You need to know, understand and be able to demonstrate' section of the Specification for each unit outlines what is required

AO3 (Apply knowledge, skills and understanding to produce solutions to ICT problems) involves assessing the candidate's ability to be able to apply the knowledge and understanding that they have gained to a particular situation and to use it to design solutions to problems that can be solved using these practical skills. Candidates must be able to formulate criteria that will allow them to test and assess how well their solution meets the client needs. They will also have to design any tests that will be necessary to

provide evidence of whether assessment criteria have been met and hence whether the solution meets the client needs.

AO4 (Evaluate ICT solutions and own performance) assesses the candidate's ability to show the results of testing their solutions and analyse these in order to assess how effective they are. They also need to assess their own performance in meeting the requirements of the unit. Also assessed is the quality of their written communication.

Comments on AO4 that apply to all the Centre-assessed units

Assessment Objective 4 (AO4) has the same weighting and contains the same criteria for all AS units. It assesses the candidate's ability to plan and manage their time; describe the tasks that they needed to carry out in order to complete the requirements of the unit; set criteria against which they can evaluate what they have produced and carry out testing that takes into account these criteria; evaluate what they have produced and their own performance in producing it.

For Row 2 of AO4 candidates need to produce some kind of time plan, showing how they intend to use their time in order to produce their portfolio of evidence. This may be combined with the evidence for Row 1, which describes the actions that they need to take to produce the portfolio of evidence (referred to as 'the problem'). To gain the higher marks on Row 2 the candidate should include not only an estimated time of completion for each action planned, but should update this at frequent intervals to show that they are monitoring their progress and making any necessary adjustments. They will gain maximum marks if they can explain why any deadlines have been missed and what action has been taken to get back on track for the final deadline. Perfect time planning is not expected of candidates at this stage of their learning and it is far better for candidates to be honest than to pretend that everything has gone to schedule.

The evaluation criteria for Row 3 should be set so that the candidate can test whether what they have produced meets client needs. What they have produced is referred to as 'the solution'. To gain one mark testing must also have taken place. To gain two or more marks the testing must take account of the evaluation criteria which should be appropriate to the client needs. The evaluation criteria are **not** necessarily the same as the client requirements. For example the client may require a website that 'loads quickly'. The candidate should then turn this into an evaluation criterion such as 'each page will load within 3 seconds over a 2Mb connection'. Testing of the website should take this into account and the results of testing used to inform the evaluation carried out (assessed in Row 4).

Unit IT02: ICT and Organisations

A wide range of marks was applied, accurately in many cases, but much less so in others. The main cause of inaccuracy of assessment was the interpretation of the requirements for this unit.
This unit is similar in the area of study that it covers to the VCE Unit 2, ICT Serving Organisations. However the similarity is superficial. Whilst candidates have to describe ICT use within an organisation, they do not have to suggest how that ICT use could be improved. Many candidates expended substantial effort in finding a problem with the ICT use within an organisation and suggesting a remedy to that problem. This did not gain any further marks.

The portfolio requirement for this unit is in two parts.

The first is that the candidates provide evidence that they have researched the use of ICT within organisations of different types and size. A minimum of two named organisations (of different type and size) should be described, as should their use of ICT. Candidates should make it clear where their information came from and this section of the portfolio should be labelled clearly.

The second part is a formal report, written for a non-IT strategic manager. The report should describe the use of ICT within one named organisation and may focus on one specific ICT system and how it meets the data handling needs of the whole organisation, or on one business function and how its needs are met by a variety of ICT systems. If the organisation is small then details of all business functions and all ICT systems may be required in order to achieve the scope required. The report should be detailed, contain all the elements required within a formal report and a draft copy should be presented to show where required corrections had been identified.

In many portfolios it was not clear which was the research section and which was the formal report. Many candidates had provided evidence of general research but did not gain credit as they had not named specific organisations. Some candidates had provided research into organisations that were too similar in type and size to gain all the marks available.

Many candidates were able to gain very high marks on AO1, for the practical aspects of the formal report. Many, however, provided multiple versions of the draft report – these added considerably to the volume but not the marks gained. One draft is sufficient as long as all the amendments required are annotated on it.

Several Centres awarded marks for annotation on the report that appeared to have been made by the teacher. Marks may only be awarded for work that is the candidate's own.

Unit IT03: Data Handling

A wide variety of work was submitted for this unit, much of which was accurately assessed. Again a wide range of marks was awarded with some candidates appropriately being awarded maximum marks.

Whilst many Centres had interpreted the portfolio requirements for this unit correctly, a number had not. The unit requires candidates to produce a solution to a data handling problem that requires the use of at least two related tables. The emphasis is not on producing a relational database, but on designing a solution that processes data, using related tables, to produce outputs that meet a clients requirements. Candidates who focused on the process of producing a relational database were able to gain some of the marks available, but generally did not consider how to match their output to the user's requirements.

AO1 assesses the practical aspects of the solution, in particular whether the software used has been utilised to produce an appropriate solution for the client. The wording of some rows on the Marking Grid is very similar to some of those in AO3. However, AO3 is concerned more with the design of the solution and consideration of the inputs, processing and output required to ensure that they meet client requirements.

Many candidates provided good evidence, in the form of screenshots, which showed the required evidence for AO1 and AO3. However, many others had been awarded marks though they had not shown how what they had done had been tailored to meet client needs.

Some candidates had produced screenshots that were unreadable and which meant that the Moderator could not always agree with the assessment decision.

A substantial number of candidates had included guides to producing a relational database, or a guide on how to use the solution they had created. Generally these added to the volume of the portfolio but did not meet any of the assessment criteria, so gained no marks.

It was noted that guidance on testing had been followed by the majority of candidates who had attempted to test their solutions. This meant that there were very few instances of repetitive, meaningless testing and far more of small amounts of relevant testing that clearly demonstrated the effectiveness of the solution produced.

Unit IT04: ICT Solutions

Many Centres had approached this unit in the manner suggested at Teacher Support Meetings and their candidates had produced a variety of work, much of which was accurately assessed. Other Centres had used different approaches, with varying degrees of success, both in terms of the work produced by candidates and accuracy of assessment.

It is important to bear in mind that this is a practical unit and candidates will only gain credit for work which demonstrates the skills required by the Specification. A large number of candidates included large quantities of notes about how to, for example, set up user accounts and alter file permissions but did not actually demonstrate that they had carried out these tasks. These candidates gained no marks on the relevant parts of the assessment criteria, as they had not demonstrated their ability to do those things.

Some Centres made good use of detailed authenticated personalised witness statements to provide evidence of items in the assessment requirements that would otherwise be difficult to document, or to confirm that candidates had actually undertaken tasks such as taking electrostatic discharge precautions whilst performing workshop tasks. It should be noted, however, that witness statements must refer specifically to the individual candidate and clearly state what that candidate has done.

Some Centres had made good use of photographic evidence that candidates had carried out practical tasks, but again it should be noted that these photographs must relate to the individual candidate and not, as some Centres had done, to work done by the whole class who then used the same photographs for all candidates.

The portfolio requirements for this unit are split into two parts –the first being research and workshop tasks; the second being the production of a specification for a **standalone** computer system for a specified client. Many candidates had neglected to find out sufficient detail about what their clients wished to be able to do with their systems and descriptions of items such as amount of backing store required or processor speed, were not related to practical use by the particular client.

Candidates should provide evidence that they have carried out research into hardware and software available to meet the requirements of a client, and in the process of doing so discussing the options available. All sources of information should be recorded. This should lead to the production of a recommended, detailed specification for the client. Many candidates had carried out extensive research but had not clearly stated what their recommendations for the client were. These candidates failed to gain marks for the final specification. Other candidates produced detailed specifications but failed to show how they had researched the options that they came up with. These candidates did not gain marks for their research. To gain the full marks available candidates must clearly distinguish between the two items. Some candidates provided highly detailed specifications that gained high marks and demonstrated a great deal of understanding of current hardware, software and workstation furniture.

Few candidates provided information about cables or connectors necessary for their specification, but some of those who did provided very high quality images and descriptions that gained all the marks available.

Some Centres had asked their candidates to describe the specification of machines that were already being used. In these cases, the descriptions were often very detailed but the candidates were unable to gain marks for the specification.

A significant number of candidates created specifications for network systems, or for other types of system that did not fully meet the requirements for assessment. It is important that Centres do not allow their candidates to carry out tasks that may not allow them to access the full marks available.

Most candidates had attempted to set file permissions or user rights and the majority of these had devised backup strategies. A smaller number had devised a backup strategy that met client needs and a minority had provided evidence of security measures taken and addressed management issues. It must be noted that these items appear on the same row of the Marking Grid for AO1, but they may not be substituted one for another. A significant number of candidates had for example, talked about the security measures that they had taken but not devised a backup strategy. These candidates should only have been awarded a lower mark for this row. A significant number also referred to backup that they had done, but did not relate the strategy to the client needs.

The section on ergonomics was attempted by most candidates but a very large number failed to gain any of the marks available because they gave general information only and did not relate this to the context of their client. Others failed to gain the higher marks because they had not shown how they had used the Internet (by providing details of their research and sources) to identify suitable options for the client.

Unit IT05: Fundamentals of Programming

This unit assesses the candidate's grasp of the fundamental practices and principles that are the foundation of good programming. As such and bearing in mind the likely absence of real clients, most Centres set scenarios for their candidates to undertake. On the whole these scenarios did provide candidates with a reasonable amount of information with which to work out a specification and produce a programmed solution. The danger with setting a scenario is of setting one that is too ambitious, where the candidate tries to do too much and gets bogged down in detail. At the other end of the scale is the scenario that provides a huge amount of information but restricts the possible solution to such trivial programs that the candidate has no possibility of demonstrating their full ability and so not gaining the higher marks available. Centres are advised to consult their Portfolio Adviser if they need guidance on the suitability of a particular scenario.

Although some Centres did fall into these two categories, the vast majority provided scenarios that were appropriate and realistic. As a result some imaginative programs were produced that gained high marks. It is worth noting one example of good practice where a teacher had contacted the candidates through an alias and acted as client with the candidates clearly not realising this was the case.

On the whole this unit was very accurately assessed, possibly as a result of it being taught by more specialist staff.

The main areas of weakness in candidates' portfolios were to do with interface design (assessed in AO2) and the specification and testing of the program (assessed in AO3).

In order to gain higher marks for the user interface the candidate should annotate it to show why they have used the features included and to show that they understand how the design may help the user. Having a clearer understanding of issues involved in interface design before they started work on their portfolios may have benefited some candidates.

Most candidates provided a brief program specification but few included details of processing in pseudo-code or flowchart form that was accurate or detailed. Very few indeed provided a module chart that showed the relationship between modules in their program, or described the purpose and use of the variables and constants in their programs.

In the main testing was superficial, with test plans that only used standard data and normal events, though where evidence of testing was provided this was usually cross-referenced to a test plan.

When providing a listing of program code, candidates should be encouraged to copy the code into a word-processing application, as most programming environments only allow the printing of plain text files which often means that indentation is not clear and the lack of margins on pages of code leads to the binding obscuring the code.

Unit IT06: Computer Artwork

Of all the practitioner units this was the one where candidates most often produced work which did not meet the assessment requirements. This unit is about the production of images, not the creation of documents or the design of products. This unit is also not similar in requirements to the VCE Computer Artwork Unit. It was clear, from the portfolios seen, that most of the candidates who had been entered for this unit enjoyed the work that they did and were, in many cases, able to demonstrate considerable skill in the use of artwork applications.

A very large number of candidates produced portfolios that would have been best suited to a Desktop Publishing unit; many others produced work that would have been more suited to a Design Technology unit. These candidates, in the main, gained very few marks, despite the high quality of some of the work produced, because the amount of artwork in the portfolios was very limited. Some candidates produced relatively simple artwork and gained high marks because what they produced closely fitted the assessment requirements.

The portfolio requirements for this unit are two-fold. Firstly the candidate should produce a portfolio of sample artwork that demonstrates a range of techniques, using a variety of artwork applications and image capture methods. This sample of artwork should be suitable for showing to a client. Secondly, the candidate should draw designs for, and produce a final version of, a piece of artwork that meets the requirements of a client. Ideally the finished artwork should demonstrate the use of some of the techniques shown in the portfolio of sample artwork.

Some candidates produced very high quality work that demonstrated proficiency in the use of artwork software and an understanding of the iterative nature of considering client needs, refining initial and final designs and planning the production and refinement of the final artwork.

A large number of candidates did not clearly label their samples of artwork to show which are bitmap and which are vector based images. These candidates often also failed to state what artwork applications they had used to create them or the source of their images, so being unable to gain high marks for what were, in some cases, good portfolios of images. Many of the samples were not appropriate for showing to a client.

Many candidates did not have a clear idea of who their client was and as a result the client needs were vague, the initial designs were unclear and the final artwork was poor. AO2 requires notes from a briefing with a client. There were many instances of faked letters and emails from 'clients' with similarly styled 'interview notes'. In such cases the assessor should not award any marks on the relevant row of the Marking Grid. Whilst moderators are instructed to give benefit of the doubt to the candidate, assessors should need to authenticate real evidence that is provided in order to leave no doubt about its validity. There are important issues regarding malpractice by submitting work which is not genuine.

Some candidates who produced logos did so using bitmap packages and so failed to take into account the probable client need to accurately resize the logo to fit different documents or products.

Better candidates produced initial designs that gave a clear indication of size and position of all elements within the artwork. Their final designs included details of size, accurate colour values and so on. They also gave a clear indication of how the artwork would be produced, how the images necessary would be captured and how the finished artwork would be edited.

It is worth noting here that AO3 mainly assesses the candidate's ability to plan the production of the finished artwork and candidates who provided even quite detailed commentary on the implementation of the finished artwork did not gain marks, whereas those who attempted to plan the implementation did.

Unit IT07: Creating a Website

This unit was the most popular of the Double Award optional units, with the majority of candidates being entered for it. Again it was clear, from the portfolios seen, that candidates had enjoyed the practical aspects of the unit and some websites had been produced that compared favourably with commercially produced ones. A very wide range of real clients had been used and these enabled candidates to produce a very wide variety of interesting sites.

Many of the portfolios seen had been accurately assessed, though there were a number of areas of the assessment criteria that seemed to have been misunderstood by a number of Centres.

This is a unit where the use of authenticated witness statements would be an excellent source of evidence, or confirmation, of items that are otherwise difficult to document. Witness statements could be used for such items as the use of video and sound; the correct setting up and working of hyperlinks; that off-line and on-line versions of the website are fully working; the use of special effects; the use of page formatting structures in web pages.

A number of candidates included extensive printouts of html code. This should be actively discouraged unless it is annotated to show relevant details that are required to meet the assessment criteria, in which case only the relevant sections should be included.

The use of code from external sources was often incorrectly demonstrated. Where such code is used, the candidate should state the source and if they have edited it should show the original code and the edited version. Row 3 of AO1 requires code from external sources to assist functionality. Many candidates had used code from external sources but had not explained how it assisted the functionality of their site, so were not able to gain more than one mark on this row. Row 4 of AO2 requires the candidate to research the coding of features used by websites of enhance their web pages. A large percentage of candidates had investigated other websites and had provided extensive analyses of their good and bad features, but had not shown the coding used to produce these features. These candidates failed to gain any marks on this row.

Candidates should be encouraged to provide screenshots of their web pages in a browser, rather than in the web page editor, as these often more accurately reflect the final product and often provide additional evidence of the actual implementation of the website. Unfortunately many candidates provided screenshots that were difficult or impossible to read because of their size or because of colour clashes exacerbated by printing in monochrome.

Mark Range and Award of Grades

GCE Applied Information and Communication Technology

Units	Maximum Mark (Raw)	Maximum Mark (Scaled)	Mean Mark (Scaled)	Standard Deviation (Scaled)
IT01: ICT and Society	70	70	32.2	10.4
IT02: ICT and Organisations	70	70	32.7	13.4
IT03: Data Handling	70	70	37.0	12.7
IT04: ICT Solutions	70	70	31.3	13.3
IT05: Fundamentals of Programming	70	70	32.8	11.6
IT06: Computer Artwork	70	70	31.2	13.5
IT07: Creating a Website	70	70	34.6	12.2

In Applied GCE examinations, scaled marks are the same as raw marks.

Unit 1: ICT and Society (IT01) (2275 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	51	45	39	34	29
Uniform Boundary Mark	100	80	70	60	50	40

Unit 2: ICT and Organisations (IT02) (3451 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	53	47	41	35	29
Uniform Boundary Mark	100	80	70	60	50	40

Unit 3: Data Handling (IT03) (3457 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	53	46	40	34	28
Uniform Boundary Mark	100	80	70	60	50	40

Unit 4: ICT Sloutions (IT04) (849 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	51	46	41	36	31
Uniform Boundary Mark	100	80	70	60	50	40

Unit 5: Fundamentals of Programming (IT05) (500 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	50	44	39	34	29
Uniform Boundary Mark	100	80	70	60	50	40

Unit 6: Computer Artwork (IT06) (352 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	52	46	41	36	31
Uniform Boundary Mark	100	80	70	60	50	40

Unit 7: Creating a Website (IT07) (754 candidates)

Grade	Max. mark	A	B	C	D	E
Scaled Boundary Mark	70	51	46	41	36	31
Uniform Boundary Mark	100	80	70	60	50	40

Advanced Subsidiary Single award

Provisional statistics for the award (2383 candidates)

	A	B	C	D	E
Cumulative %	4.1	13.0	29.2	50.2	72.2

Advanced Subsidiary Double award

Provisional statistics for the award (628 candidates)

	AA	AB	BB	BC	CC	CD	DD	DE	EE
Cumulative %	2.1	4.1	8.1	12.4	19.4	28.7	38.9	53.5	65.9

Definitions

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

Mean Mark: is the sum of all candidates' marks divided by the number of candidates. In order to compare mean marks for different components, the mean mark (scaled) should be expressed as a percentage of the maximum mark (scaled).

Standard Deviation: a measure of the spread of candidates' marks. In most components, approximately two-thirds of all candidates lie in a range of plus or minus one standard deviation from the mean, and approximately 95% of all candidates lie in a range of plus or minus two standard deviations from the mean. In order to compare the standard deviations for different components, the standard deviation (scaled) should be expressed as a percentage of the maximum mark (scaled).

Uniform Mark: a score on a standard scale which indicates a candidate's performance. The lowest uniform mark for grade A is always 80% of the maximum uniform mark for the unit, similarly grade B is 70%, grade C is 60%, grade D is 50% and grade E is 40%. A candidate's total scaled mark for each unit is converted to a uniform mark and the uniform marks for the units which count towards the AS or A-level qualification are added in order to determine the candidate's overall grade.