

## CASE STUDIES IN SUMMATIVE ASSESSMENT: AN INVESTIGATION

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### SUMMARY

This paper reports on a qualitative study that explored the features of a good case study for use in summative assessment at GCSE and GCE. The study consisted of two focus groups and two interviews conducted with examiners, two focus groups with teachers and two focus groups with students. It established that the purpose of a case study in summative assessment is to provide a context. For example, a business undergoing change in business studies, or a place that demonstrates geological processes in geography. The context is used to assess the higher order skills associated with application. These higher order skills include analysis, selection, evaluation, judgement and decision-making. The participants suggested that a successful case study has seven essential features: a realistic contemporary context; an understandable context; a neutral context; a dynamic storyline; the creation of choice within the case study; sufficient detail; and, coherence of examination materials (case study, questions and mark scheme). Examiners, students and teachers were unanimous on the first three features. Examiners and teachers articulated the second three features with greater clarity than the students. Only the teachers suggested the coherence of examination materials as a desirable feature of case studies. All of the features are consistent with the characteristics required of any assessment, namely, that it should be valid, accessible, fair, able to differentiate across the ability range and pitched at the correct level.

The seven features of a good case study identified in this investigation will be used as the basis of guidance on how to write case studies. Such guidance will be useful for examiners and teachers new to writing case studies. It will also ensure a consistent approach to the writing of case studies. This will go some way to providing a uniform assessment experience for students who sit case study-based examinations in more than one subject.

### KEYWORDS

case studies, summative assessment, qualitative survey

### INTRODUCTION

In the literature the simplest definition of a case study is that it is a description of a real situation (Naumes & Naumes, 2000). When there are questions associated with the case study it is defined as a complex assessment of a student's ability to solve problems (Baker & Mayer, 1999). The purpose of case studies in formative assessment is to present candidates with a challenge that enables them to demonstrate constructed knowledge, as well as acquired knowledge, and meaningful learning through the application of knowledge and evaluation of actual or potential solutions to a scenario (Baker & Mayer, 1999). Problem-solving is defined by Mayer (1990; cited in Baker & Mayer, 1999) as "...cognitive processing directed at transforming a given situation into a desired solution when no obvious method of solution is available to the problem solver". Mayer (1990; cited in Baker & Mayer, 1999) also describes four characteristics of problem-solving involved in responding to case studies.

1. Cognitive – the problem solver undertakes a number of cognitive processes which can only be inferred from either their behaviour or the contents of the examination script.
2. Process-based – the procedures and processes used to manipulate and transform internalised knowledge from learning and the information provided in the case study.
3. Directed – the problem solver aims to solve the problem they are presented with using the tools for the task that they have been taught about in the classroom.
4. Personal – the ability to solve a particular problem is dependent on the current state of the candidate's learning in and understanding of the subject.

The literature suggests that case studies are used mainly in the tertiary education sector and primarily for formative assessment (Erskine, Leenders, & Mauffette-Leenders, 2003)<sup>1</sup>. Case studies provide teachers and students with the a “bridge between theory and practice” (Pindiprolu, Peck Peterson, Rule, & Lignugaris/Kraft, 2003, p. 1). Their use encourages students to access deep learning, apply higher order skills (such as analysis, evaluation and synthesis) and become reflective learners (see, for example, Wee, Alexandria, Kek, & Kelley, 2003). Most of the evidence supporting this assertion is anecdotal in nature, such as that found in Pearce (2002).

Naumes and Naumes (2000) and Erskine *et al.* (2003) identify some desirable characteristics of case studies. The identification is based on their own experiences whilst using case studies to teach business and management to undergraduates and graduates. Naumes and Naumes (2000) favour long (in excess of ten pages) and complex case studies. They consider complexity to be the result of the inclusion of redundant information plus the incorporation of gaps into the information available in the case study. The objective of the information gaps is to encourage students to state any assumptions that they need to make when analysing the remaining data. Erskine *et al.* (2003) prefer the inclusion of pertinent information with few or no gaps. Both sets of researchers agree that for case studies to engage students they should be real rather than fictional, possess a narrative and contain characters with which students are able to identify.

Given the length of these case studies, assignments based on them are completed in days or weeks for formative assessment purposes. Students usually work in teams and the measured outcomes are, for example, team presentations and class discussions. As Wee *et al.* (2003) point out, with reference to both formative and summative uses of case studies, the assessment may include self- and peer-evaluation, as well as teacher evaluation. The open book format is favoured when case studies are used in summative assessment (Parkinson, 2008).

In contrast, the case studies provided by AQA are intended for use in closed-book summative assessment examinations lasting between one and two hours. They are also intended to assess the cognitive processes of candidates working on their own rather than as part of a group. Further, most case studies are unseen prior to the examination. Taking the business subjects suite of GCSE and GCE qualifications as an example, nearly one third (18 out of 62) of the available assessments are examinations that use at least one unseen case study. Nearly 100,000 students at GCSE and GCE A Level prepare for and take these case study-based examinations annually.

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<sup>1</sup> Further examples can be found in Lyons (2008) for management; Kim, Utke, & Hupp (2005) and Kleinfeld (1990) for teacher education; Henson, Kennett, & Norman Kennedy (2003) for marketing; and, Gagnon, Charlin, Lambert, Carriere, & Van Der Vleuten (2009) for medicine.

There are three types of case study item used in AQA's question papers.

1. An unseen case study provided at the start of the question paper.
2. A series of shorter unseen case studies within the question paper. There may be a single theme connecting the case studies or they may be independent in terms of scenarios.
3. Pre-released case studies which are sent to schools and colleges approximately one month before the examination.

Geography students, on the other hand bring a toolkit of case studies into the examinations and select the ones that are appropriate to their responses to the questions. The new GCE Geography specification suggests students need to learn at least 34 case studies over the four units. Any of these case studies may be used as measures of learning in the appropriate unit.

The literature does not offer any specific guidance on the writing of unseen case studies for summative assessment of 16 to 19 year olds. The British Association for the Deaf (*Language of Examinations*, 2003) provides limited advice on the modification of case studies. Much of this refers to issues of presentation and the simplification of the language used in question papers. Two items, though, are relevant to the writing of case studies: (i) "get rid of any unnecessary, unhelpful information"; and, (ii) "put information into logical or chronological order" (*Language of Examinations*, 2003, p. 20).

The design of an assessment instrument begins with a clear statement of what skills are to be assessed by the instrument (Pidgeon & Yates, 1968; Roid & Haladyna, 1982). Beyond this there is a pool of literature dealing with the optimal properties of assessment instruments (see, for example, Chamberlain, 2009; Roid & Haladyna, 1982). Amongst the most relevant to the writing of case studies is the work of Ahmed and Pollitt (2007) on the contextualisation of questions in GCSE Science assessments. They recommend the design of a real world context that is focused on the skill that the question requires candidates to demonstrate. Irrelevant context distracts candidates and can lead to confusion.

Ahmed and Pollitt (2007) are seeking to avoid mismatches between what the question setter thinks the question is asking and what the candidate thinks the question is asking. To achieve this, Crisp, Sweiry, Ahmed and Pollitt (2008) make three additional recommendations. (i) Use clear, unambiguous language. (ii) Provide clear signposting as to the type and level of response a question requires. Signposts include the amount of space allocated for the response and highlighting of key words. (iii) Take into consideration the expectations of candidates when they are in the reading comprehension phase of responding to a question. In summary, the use of language and structure of text are key to producing question papers containing content that candidates are able to comprehend. Logically the same advice should hold for case studies.

Pollitt, Ahmed, Baird, Tognolini, and Davidson (2008), in their report on how to improve assessment at GCSE, recommend that the wide range of ways in which case studies are used should be reconsidered. Their report is based on an analysis of question papers and mark schemes in business studies, geography and design and technology from five awarding bodies in the UK. It identifies three ways in which the validity of an examination may be compromised: (i) failure to control students' thought processes; (ii) inadequate mark schemes; and, (iii) mismatch between the question and the mark scheme. The researchers express concern that the use of real case studies in business and geography may threaten students' ability to demonstrate understanding or the application of knowledge. This may happen for two reasons.

Firstly, if the context of a case study has been in the recent news headlines, is a matter of local knowledge for some students or was used in class, students' responses to questions may be based on recall of the context. Secondly, a real case study may require alteration so that appropriate questions can be set. If the alterations cause the case study to drift away from the previously reported reality, students, and possibly examiners, will become confused. As a result, Pollitt *et al.* (2008) veer towards recommending the use of fictional case studies at GCSE.

There is a dearth of guidance on the writing of unseen case studies for summative assessment in GCSE and GCE. This investigation aims to plug the gap by surveying the opinions of writers (examiners) and users of case studies (students and teachers) as to what they think are the features of a good case study. Features identified in this report will form the basis of guidance to examiners on the writing of case studies.

## **METHODOLOGY**

The current investigation used a qualitative methodology. This provided participants with the opportunity, in group discussions, to express their views and opinions on the characteristics of a good case study. As noted in the previous section, there is an apparent absence of previous experience in the literature on the use of case studies in summative assessment. Therefore, it was appropriate to allow the writers (examiners) and users (students and teachers) of case studies to act as guides in answering the research question. The fluid nature of the investigation also allowed the outcomes of the research to be grounded<sup>2</sup> in the data generated from the experiences and observations of the participants (Foster & Parker, 1995, p. 167; Maxwell, 1996). Consequently, any guidance on the writing of case studies produced as an outcome of the current investigation will be based on the experience of people who write and use case studies in summative assessment.

### **Participants**

#### **The examiner focus groups**

Eight examiners participated in two focus groups of four participants each. To supplement the data gathered from these groups, two examiners took part in separate interviews. All of the examiners, except for two revisers in the second focus group, had written case studies as part of summative assessments in business subjects. The examiners represented all levels of qualification (GCSE, GCE, Applied and Diploma) within the business subject suite. With the agreement of subject managers, the focus groups and interviews took place after standardisation meetings; this was the easiest way of ensuring the availability of participants, but opportunistic in nature.

#### **The student focus groups**

A total of thirteen students aged either 17 or 18 years old took part in two focus groups, one at each of two Sixth Form Colleges: the first focus group contained six students and the second contained seven students. All of the students were at the end of their first year, having just sat their AS units. Overall, five students studied business, four studied geography and four studied both subjects. Art, economics, French, history and PE were the most popular additional subjects. The Heads of Department for business and geography selected the students, who received a book voucher each for participating.

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<sup>2</sup> Grounded theory in its fullest sense was not used in this investigation. The use of the word grounded is meant to convey the naiveté of the investigator towards the research question and a design that was aimed at deriving guidance from the experiences of writers and users of case studies.

### **The teacher focus groups**

Twelve teachers participated in two focus groups of six participants each. The teacher focus groups took place in the same Sixth Form Colleges as the student focus groups. The first focus group contained three teachers from business and three from geography; the second consisted of five teachers from business and one from geography. The imbalance of subjects in the second group was due to staff illness. All participants received a voucher for participating. The subject departments also received a book voucher for organising the focus groups.

The presence of two Heads of Department in each of the teacher focus groups may have led to either motivated or inhibited responding. This may have some impact on the quality of the data gathered. This was not an issue for the student focus groups.

Two criteria dictated the selection of the two Sixth Form Colleges. The first criterion was one of geographical convenience. The second was that their total entries at GCE for business and geography subjects in June 2009 were in the top three for the local area.

As with most qualitative research the sample sizes in this investigation were small. The business subjects suite of qualifications employs a number of examiners who write case studies; one reason for selecting examiners from only this subject. It also proved to be difficult to gather more than four participants in one place at the height of the summer marking series. Hence a second reason for simplifying the selection of examiners by using only one subject.

The request was made for a mix of participants from business and geography in the student and teacher focus groups to ensure sufficient numbers participated in each group. The mixing of two subjects that use case studies in different ways may provide greater insight into the research question due to the contrasting experiences and interpretations of the participants. However, the views of examiners, students and teachers from other subjects may be very different from those reported here. Therefore, caution is recommended in extending the findings.

### **Method**

Two AQA staff attended each focus group; one as the facilitator and one as an observer. The facilitator's role was to introduce the topic, ask questions to prompt discussion and to maintain the momentum of the conversation on-topic as far as possible. The observer took hand written notes of interesting comments and themes that they identified during the sessions. These were discussed with the facilitator after the session. The same researcher facilitated all six focus groups to ensure a consistent approach; two observers attended one each of the teacher focus groups and a third observer attended all of the student and teacher focus groups. Focus groups lasted for one hour and were based on the schedule shown in Appendix A.

The facilitator of the focus groups also conducted the two examiner interviews without an observer being present. The interviews took approximately one and half hours each. They were loosely based on the schedule shown in Appendix A.

Each focus group and interview consisted of two sections. In the first section the facilitator initially prompted participants to discuss their opinions on the purpose(s) of case studies in summative assessment. The discussion then developed into the identification of features that ensured a good case study fulfilled its purposes. The second section consisted of a comparison exercise, in which participants were asked to consider examples of case studies from past question papers whilst bearing in mind the features that they had already identified as belonging

to a good case study. Each example of a case study included the questions and mark scheme, as well as the case study itself. The selection of case studies presented to the participants included examples from GCSE, GCE and Applied qualifications. The examiners were presented with case studies taken from subjects in the suites of business, social sciences, the arts and geography/leisure and tourism, whilst the students and teachers received a set that was limited to the business and geography/leisure and tourism suites. The students were encouraged to work in pairs during the comparison exercise. After considering two or more examples, participants discussed the already identified features by comparing the case studies that they usually work with, with the ones they had considered during the comparison exercise.

The prompts for the examiner and teacher groups were similar. The initial prompt was about their perception of the purpose of case studies, followed by asking about the skills that they thought case studies assessed. From this point prompts, when needed, were about the features of case studies and how they fulfilled their purposes. The prompts for the student focus groups started by asking them what their thoughts were about using case studies, what they found useful and what aspects of case studies they liked. The facilitator needed to provide a greater number of prompts to the student focus groups to maintain the momentum of the discussions.

Participants gave their consent for their focus group or interview to be audio recorded having been informed that all contributions would be anonymised when transcribed. The qualitative data were transcribed verbatim. The transcripts were analysed using dominant theme analysis. This involved several readings of the transcripts while searching for dominant themes and mapping participants' comments to these themes where appropriate. The dominance of a theme was characterised by its extensiveness and the degree of emphasis placed on it (Kreuger & Casey, 2000).

## **FINDINGS**

The findings of this investigation are divided into three sections. The first and second sections report what the examiners, students and teachers each identified as the purposes of a case study and the skills that are assessed through the use of a case study, respectively. Section three presents the seven features of a good case study, as identified by the participants.

### **1. The purpose of case studies in assessment**

Unsurprisingly the examiners suggested that case studies should be used to assess the skills required to apply subject knowledge to the business or scenario provided in the context.

*A context [to] allow you to ask questions and to allow the students to bring in their knowledge and apply their knowledge. (Examiner, focus group 1)*

Teachers used case studies as part of formative assessment “*in support of revisions coming up to exams*”, mock examinations, homework and classroom-based work. Both business subjects and geography teachers agreed that the purpose of case studies in formative assessment was to illustrate and clarify theory. This is consistent with the concept of case studies acting as a “bridge between theory and practice” (Pindiprolu *et al.*, 2003, p. 1).

*Quite often I'll use a case study to actually demonstrate theoretical constructs, and I'll work backwards. (Teacher, business subjects, focus group 2)*

*In geography ... the case study actually provides the framework to expand upon different aspects of theory. (Teacher, geography, focus group 2)*

The teachers also suggested that they used case studies in the classroom as they featured frequently in examinations.

*There's a lot of case study work on the course 'cause we realised that the exams are very much case study based and so we try to make a lot of the lessons based around case studies. (Teacher, business subjects, focus group 2)*

This teaching strategy demonstrates a backwash effect caused by the method of assessment. Noting this backwash effect provides a further impetus to identify the features of a good case study. A good case study for summative assessment may have a positive influence beyond the examination when it is used as part of formative assessment.

Students noted that during formative assessment case studies served as a useful method of summarising a topic and as an aid to memory:

*... with business you usually do a case study at the end of a topic, so once you've learnt all the information. So it helps, like, round it up. (Student, business subjects, focus group 2)*

*... it helps remind you of details, like 'cause, the case study will have all the details of geographical stuff ...like with business. (Student, business subjects and geography, focus group 2)*

Students were also in agreement with teachers that case studies helped to clarify theory:

*It's a lot easier to understand the theory when it's applied to a real life situation or something that's happened. (Student, geography, focus group 2)*

Under examination conditions, however, students reported a change of primary purpose for the case study. They considered the case study as a source of information which they used in their responses and as a focus.

*You can look back at the case study to get information out of that as well, which can help you with your question. (Student, business subjects, focus group 2)*

*And it gives more of a focus to the exam rather than just questions. You can actually get to, you know, understand a business. (Student,*

business subjects, focus group 2)

## **2. The skills assessed through case studies in summative assessment**

The examiners were looking to assess higher order skills through the use of case studies in summative assessment. These higher order skills included, but were not limited to, selection, judgement, decision-making, evaluation, argument and creativity. Of these, the examiners and the teachers laid particular emphasis on the ability to select appropriate information from the case study and then ally this with selected theory to produce decisions supported by logical arguments.

*It's also a vehicle for lots of other skills, isn't it? That it makes [the students] think selectively, so it gives them a context where they've got to go into their filing cabinet of knowledge and pull out the relevant bits of information that they need, rather than just splurging. I think also it gives them room for evaluation because evaluative questions will ask them to think about this particular business scenario, not to come out with more general comments and judgements. (Examiner, focus group 1)*

*... if you were writing ... case study material ... you want to have the opportunity to test a whole range of skills, I can't quite see the point in writing [a case study] just to test knowledge. (Examiner, focus group 1)*

*They actually have to be able to think through what in most cases are complex types of problems, and use the theory to underpin and support the decisions that they're making. (Examiner, interview 1)*

*It's quite easy to ... describe information, but then to interact with it or develop a position takes quite a lot of effort and practice. (Teacher, business subjects, focus group 2)*

Interestingly, the student participants were acutely aware of the need to demonstrate these higher order skills so that they were able to access the higher marking levels and grades. This awareness stemmed from their reading of the mark schemes that accompany past question papers. Baird *et al.* (2009) also found that GCE students incorporate analyses of mark schemes into their studies.

*'Cause obviously, like, in geography where you've got 15 mark questions and you're not going to get to the higher levels without mentioning a case study or more. So it's quite a big part of the syllabus. (Student, geography, focus group 2)*

*'Cause I think you can only get an E if you don't apply it to the business, to the case study.*

*But you can only get a maximum of a D isn't it, if you just read the book and the content, whereas you actually have to use other skills as well.*

*(Students, business subjects, focus group 2)*



Students' descriptions of the higher order skills were coarser than those of the examiners and teachers, but nonetheless, in the same domain.

Seeking to assess higher order skills will lead to a multiplicity of correct responses. The examiners were aware of and desired this.

*But also if you're asking, presenting a problem and you want a solution you don't want [the students] all to come up with the same solution. So [there's] got to be enough sort of scope within [the case study] that [for] the following questions not all students will reach the same conclusion. (Examiner, focus group 1)*

### **3. The seven features of a good case study**

The analysis suggested that there are seven main features of a good case study. The participants identified these features as being important to fulfilling the purposes of a case study and providing students with the opportunity to demonstrate the higher order skills described by the examiners and teachers. The features are: a realistic contemporary context; an understandable context; a neutral context; a dynamic storyline; the creation of choice; sufficient detail; and, coherence of examination materials.

#### **i. A realistic contemporary context**

All three groups of participants agreed that a good case study needs to be realistic and contemporary or “*topical*”. Examiners and teachers stated that a realistic and contemporary context would be “*accessible*” to students and “*relate to the students' experience*” which would help the students to engage with the case study. It would also have face validity (Pidgeon & Yates, 1968) because it remains within the bounds of familiarity for students and teachers both inside and outside the classroom.

The expectation of the degree of reality within a case study varied between the groups of participants. The students were of the opinion that case studies were entirely real and should be so.

*For example this year we've done a case study on some of the supermarkets and things like that. So they're normally real life, so you get a grasp of what real case studies are like and what in real businesses actually happens, so you can relate real life to what you're actually doing. (Student, business subjects, focus group 2)*

The examiners provided three reasons why the use of case studies that are entirely real in a summative assessment environment can be impractical. Firstly, they felt that the level of reality should be controlled, especially in their efforts to pitch a case study at the correct ability level for the students taking the qualification. Particularly at GCSE, examiners felt the need to remove complexity from the business situations within the case studies. This usually resulted in fictitious contexts within the case studies.

*The business I'm choosing usually has to be made up because it would be too complex to use a real business. (Examiner, focus group 1, talking about writing for GCSE)*

*... so I think at GCSE it's always a fictitious scenario. (Examiner, focus group 2)*

Secondly, certain topics do not lend themselves to the use of an entirely real case study. One of the examiners cited human resource management as a topic that required fictionalised case studies to prevent any legal problems.

*It's incredibly difficult when you start getting into issues which have real people involved and potential legal cases behind them, to actually have real life case studies because even if you try to change all the names and things of that nature, there is still a significant risk that somebody will say 'I know which business that is'. (Examiner, interview 1)*

The third problem, also acknowledged by the teachers, was that sometimes the details of a real context do not allow the writer to ask questions appropriate to the specification or that would assess the appropriate higher order skills. Therefore, the examiners “tweak” the context to bring it into line with the questions.

*... the made up allows ... much more freedom in terms of the business knowledge and content that you can put in because you can make up all the figures to show the trends that you want whereas [in a] real one you can't use something that isn't true because then you will upset the business that you are using. You can't suddenly say there's massive labour turnover when they have a very happy staff for example. (Examiner, focus group 2)*

*It's better if it is a real business, ... the students' perception is that if it's a made up business its not so important and I think its nice if it is a real business, but I know that that brings its own problems and difficulties in terms of actually writing case studies. (Teacher, business subjects, focus group 2)*

The issue of a contemporary context is summed up by one of the business subjects teachers as “...give them something like Primark”. Within business subjects, retail was regarded as an acceptable contemporary context as it was capable of “firing up the imagination of the students”, but “students couldn't draw any kind of links with” shipbuilding (a case study used in legacy GCE Business Studies). In geography recent events are used in case studies alongside the historical.

*I think the case studies need to be up to date and I think in geography they're trying to set a 30 year time frame in terms of how recently the event has happened. (Teacher, geography, focus group 2)*

Both examiners and teachers were aware that no matter how contemporary a context was at the time of writing the case study, when students were sitting them many months later, prevailing conditions or interpretations of events may have changed so greatly as to affect candidates' responses to questions, some of which may no longer be relevant.

*Our problem is, that by the time we get the case study it's out of date. ... our problem is, what aspects of current affairs would have gone on since that case study was written? Can we then apply it to the case study, what is acceptable? 'Cause examiners will say, yes we will accept a percentage of influences from the credit crunch, but we won't accept that, when they go to standardisation. (Teacher, business subjects, focus group 2)*

The only method identified by the examiners for dealing with such situations was to incorporate flexibility into the mark scheme at standardisation.

*The assessment team are as up to date as you could expect any of the students to be, potentially, and that they're prepared to be flexible in the answers that they are prepared to award marks to. So that the able candidates who are aware of ... the latest market findings, ... things that have been on the news, that you are flexible enough to accept those answers. (Examiner, interview 1)*

## **ii. An understandable context**

Not being able to understand a case study was identified by students as an issue of fairness and by teachers and examiners as preventing accessibility. In a summative assessment context, it could mean that students would be unable to access the marks associated with the case study. The student participants felt that “*sometimes [the examiners] do make [the case studies] really confusing*”. Although they were unable to articulate why it might be so, the students suggested that case studies based on start-up businesses were considered to be more difficult than those based on existing businesses. Teachers were entirely in agreement with the students on the need for an understandable context couched in language that was appropriate to the level of the qualification.

*Sometimes, I think, the weaker students will be put off by some of the terminology used in the case study and I think that's really vital, the terminology, the way its written, the style its written in, 'cause if that's not accessible to a student, then you will alienate a student before they ever get to looking at the questions and thinking about that. (Teacher, business subjects, focus group 2)*

## **iii. A neutral context**

Whilst capturing students' imagination and attention through the choice of context was considered to be important, mention was also made by all groups of trying to avoid cultural and gender biases. Only the students conceded that “*it's quite hard to get something that everyone knows*”. A recent case study about a retail business that sold fashion accessories exercised all of the groups of participants because of a perceived bias against males. Examiners and females tended to refute this by counter-claiming that such shops are within the male students' experience due to gift-buying for female family and friends.

*... one of my students complained about that because it was a girls' one and he didn't know enough about that market and therefore he was disadvantaged in his eyes and that was why he got a D. So it needs to be neutral. (Examiner, focus group 2)*

A second example, cited by an examiner, was a case study based on WHSmith, the newsagents, which proved difficult for students in Northern Ireland to engage with. WHSmith does not operate in Northern Ireland. This again illustrates one of the dangers of using a real context (Pollitt *et al.*, 2008). Pollitt *et al.* (2008) extended this to case studies in geography due to newsworthy nature of events caused by processes that are central to the assessment of learning in geography. The participants in this study did not make the same connections.

#### **iv. A dynamic storyline**

Examiners were strongly of the opinion that a good case study contains a story. Teachers shared this opinion to a lesser extent and it was a feature that was of no apparent concern to the students. Examiners and teachers both commented on the need for the case study to “*come alive*” and for students to “*really ... feel what it would be like to be there*”. This received some reinforcement from the students with comments such as “*... so you get an actual feel of what it's like to be part of a business*” when they were asked what they liked about using case studies as part of their learning.

Three elements were considered to be of importance to a storyline: the element of time (a chronology); the need for a (justified) decision; and, multiple potential futures. These elements provide the basis of a cliff-hanger that can only be resolved by the application of the candidate's understanding of the subject and their skills.

*... something happens or there's something about to happen ...so some decision that will change the direction of the company, and that makes it bold and interesting. (Teacher, business subjects, focus group 2)*

*... a story that's got a thread about, for example, a business, sort of changing over time. So, I think we think [of a] case study being as, 'let's examine business scenario', flush it down to what's been going on, and then kind of 'What do you do next?', as the next question. (Examiner, interview 2)*

*... there has to be some tension within the actual case study – the story itself. So in other words: opposing views, opposing possibilities, could be this, could be that, could have this option, could go for that option. So, it's not a straightforward story. (Examiner, focus group 1)*

The examiners felt that a dynamic storyline gave them the opportunity to incorporate differentiation into a case study and to pitch the case study at the correct ability level. One examiner likened the story within a case study to the *Magic Roundabout* (a children's television programme from the 1970s) in that it can be viewed on multiple levels depending on the age of the viewer (various ages of children and adults for the television programme). An interpretation of this for case studies might be multilayered, with the different layers being appropriate to the different ability levels. The intention was to enable candidates of all abilities to extract something from the case study which they were able to use in their responses to the questions.

*... tension, have enough in it so that more able candidates can demonstrate their skills of analysis and judgement. (Examiner, focus group 1)*

*And again the weaker ones it may help them to understand a concept that may have cropped up in the case study 'cause they can see how it's been illustrated, whereas your better students will ... take it so much further and they can possibly see two sides of something.*  
(Examiner focus group 2)

By providing sufficient layers to the story the scene is set for a series of choices or decisions and the examiners have “*create[d] the need [for candidates] to explain*” why they make some decisions and not others. The differing quality of the arguments used to justify the decisions was seen by the examiners as representative of the candidate’s ability.

Importantly, the participants suggested it was possible to have too much story at the expense of data: “*And then [the students] get bogged down in the story and actually forget the theory.*” In such cases the story served as a distraction that reduced accessibility, validity and fairness. The examiners suggested it was therefore important for writers of case studies not to become too attached to their stories and characters.

#### **v. Create choice within a case study**

The examiners stated that choice could be created within a case study in two ways. Firstly, by ensuring the case study covered a number of topics within the specification and by providing a number of “*hooks*” into these topics; secondly, by using a variety of formats to present numerical data.

*What I like about the case study is the range of topics that it has in it. So it has finance topics, it has marketing in it, it has people elements, it has all those elements and that then allows the students to take their answers off in different directions as they understand the business and the links within the data.* (Teacher, business subjects, focus group 1)

*A case study would be study the geology, the processes, the history, the sea level changes of the Orkneys to be able to explain the Old Man of Hoy ..., even to talk about what the prospects are for the long term if sea levels rise or if tourism increases.* (Teacher, geography, focus group 1)

*I'm providing lots of hooks so that every word ... I would hope we would struggle to edit it ... down. If you did, you're losing something that an argument can be based on.* (Examiner, interview 2)

Both teachers and examiners felt that a case study should be broad in terms of the topics it covered. The teachers viewed the hooks as a means of ensuring that the case study was accessible to students of all abilities. The examiners, on the other hand, were not only concerned with coverage of the specification, but also with providing candidates with the need to select information and data and, again, with “*creat[ing] the need to explain*” their selections.

The students expressed an awareness of the presence of breadth of content in the case studies:

*If you get one case study of one business, you have every different aspect, like marketing, promotion, product and all that sort of stuff. (Student, business subjects, focus group 2)*

*I mean it's a small river, but it's got all you need kind of thing, meanders and stuff. (Student, geography, focus group 2)*

They did not explicitly connect this observation with the provision of opportunities to demonstrate higher order skills. The connection was made, however, with accessibility:

*... then you will think, oh, that's talking about their marketing scheme or tactics ... so it's more like a trigger kind of thing, as well as like raw data. (Student, business subjects, focus group 2)*

Within the groups of examiners and teachers there were one or two participants who mentioned the need to present data in a variety of formats. These initial comments were met with unanimous agreement from the other participants. Teachers were looking for accessibility and the examiners wanted to create case studies that were able to differentiate across the ability range.

*It should bring ... together numerical and non-numerical information, should give them that range; and, perhaps, graphical as well. (Examiner, focus group 1)*

*I think a variety of ways of presenting information [is important], also tabulated information. (Teacher, business subjects, focus group 2)*

As far as the students were concerned the different formats in which data could be presented were not always welcome.

*... there's lots of different numbers and figures that you have to read. You have a couple of sheets, well a couple of sides and there's just all the different details of expenses and budgets and all the different figures and so it's quite ... there's a lot to comprehend. (Student, business subjects, focus group 2)*

#### **vi. Sufficient detail**

All of the groups of participants commented in some way on the importance of having sufficient (and no more) information in a case study. This was said to support a fair assessment.

*... one of the things I find difficult is getting that balance between giving them enough information, for them to be able to answer [the questions], but not too much that they just regurgitate it. (Examiner, focus group 1)*

*... there has to be something to get your teeth into. .... something whereby you can actually see and figure and analyse and think, ok this is working, this isn't working .... there has to be a reasonable*

*amount that they can get their teeth into.* (Teacher, business subjects, focus group 2)

*I think a good case study does need the right level of factual information. The problem with the Zambezi, which we decided would be a good case study ... is you just can't find the information that you would like, such as what is the discharge of the river at this point, which is fairly fundamental.* (Teacher, geography, focus group 1)

When a case study is unseen, it is important that there are no “surplus” words. Otherwise there is insufficient time for candidates, who are experiencing examination stress, to absorb the context in preparation for tackling the questions. The examiners appreciated the need for concision in the writing of case studies. They felt that this could be achieved by employing “dense” writing in which “there aren’t any wasted words whatever”, as well as conventional writing skills.

*Every single bit [in the context] is doing something and every number there should link with something else.* (Examiner, interview 2)

*It's an obvious statement, it's about paragraph length and structure ... ok? Just the size of the paragraphs that you're writing down, to keep it as, as short and concise as possible ... and that the paragraphs flow from one to the other, you know, 'cause it's conventional writing skills that are absolutely crucial.* (Examiner, focus group 1)

A minimum amount of information (including numerical data) was needed for students to begin to interact with the case study. But there is a sufficient amount of information, or detail, to add more to which would serve no useful purpose. The information provided within the case study should be relevant to the context and consistent with responses that will be rewarded in the mark scheme. By implication, not all of the information needs to be utilised by students in their responses.

*I think the best way is to have it so that one [piece of information] isn't overtly better [than another, using either in the] answer is fine, if [the students] can justify what they've said. So I think that's what I would mean by a red herring. Something which you're wanting [the students] to sift out [from] the information that's been given; but not trying to trick them into giving the wrong kind of answer.* (Examiner, focus group 2)

Most examiners expressed trepidation about the possibility of leading candidates astray by including redundant information. Redundant information, in the sense that Naumes & Naumes (2000) suggest it be used, may be relevant to the context, but its use in a student’s response will not be rewarded.

The students stated that, with the case studies they were currently working with as part of their studies, all of the information provided was useful in responding to the questions.

*...even though it is a bit long and you don't like reading it, you kind of need all that information actually to be able to answer the questions.*

(Student, business subjects, focus group 2)

There appears to be a dissonance between the expectations of students and examiners as to the purpose of sufficient detail. Although the students believed that they should make use of all of the available information in their responses, this was not the intention of the examiners who wanted students to “sift” through the information. The examiners intended all of the information to be relevant to the context, but that some information would be more valuable in justifying candidates’ decision-making.

### **vii. Coherence of examination materials**

During the comparison exercise only the examiners identified the coherence of examination materials as a feature of a good case study<sup>3</sup>. In their opinion the questions should be clearly linked to the context of the case study: “*the questions have to work with the case study*”. Candidates can be confused by questions that are not linked to the case study, to the detriment of their final mark.

*... if I was a student I would read that scenario, then I would be worried that I'm not using that, was I meant to be using that?*

(Examiner, focus group 2, about a past paper in which the case study was followed by a series of unconnected questions)

The examiners also expressed the view that the mark scheme should be coherent with the questions **and** the case study. The mark scheme should show how the skills of application are observed in the responses of candidates, usually by drawing on information in the case study, and rewarded. The examiners criticised mark schemes presented during the comparison exercise that did not reward such references. They also discussed the need to write the case study, questions and mark scheme simultaneously and use an iterative process to ensure that all three documents contained seamless links.

*... but if the context is important then the context must be in the mark scheme because if you think it's important there must be valuable stuff there.* (Examiner, interview 2)

*I go to the marking scheme and look at my answers, and then I look at the case to see whether [the answers are] carried in the case. And sometimes I end up tinkering with the case because I want to apply the points I'm bringing out in my marking scheme more fully.*

(Examiner, focus group 1)

## **DISCUSSION**

This investigation established the purpose of a case study in summative assessment at GCSE and GCE according to examiners who write case studies in business subjects, teachers of business and geography at GCE and students of business and geography at GCE (plus other subjects). A case study provides a context to which candidates can apply their understanding of theories and concepts within their subject. In doing so their higher order skills of analysis and

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<sup>3</sup> The examination materials are the case study, the questions and the mark scheme.



evaluation are assessed through their selection of information from the case study, use of theory appropriate to the case study, judgement in recommending decisions and the logical nature of the arguments they put forward to support these decisions. Similar skills are measured through the use of long, complex case studies in formative assessment in graduate business schools (Erskine *et al.*, 2003; Parkinson, 2008). Therefore, it is no surprise that some of the seven features of a good case study identified in this investigation overlap with advice offered in the writing of case studies for tertiary level business education (Naumes & Naumes, 2000; Parkinson, 2008). However, the two types of assessment are very different, particularly in the ability level at which they are pitched: 16 to 19 year olds for GCSE and GCE versus graduates. GCSE and GCE examinations are also completed in a highly controlled environment (closed-book and to time) so that the measurement of learning takes place under standard conditions for all candidates. These differences may explain why participants in the current investigation preferred to use realistic contexts rather than real ones. The use of the word realistic allows writers of case studies either to adapt the details of a real context or to create a fictional case study. The latter appears to be employed more at GCSE; a strategy that falls into line with the recommendation of Pollitt *et al.* (2008) on the use of case studies.

The use of real case studies in business subjects may fall foul of changes in the prevailing conditions between writing and taking the examination. Whilst it is a hard task to fulfil, writers should seek to future-proof their case studies as far as possible. It may be that future-proofing is best carried out in the questions and mark schemes, but this needs to be established by further consideration of the problem.

The choice of context and the terminology used to describe the context need to be understandable and neutral. Again, this is consistent with the work of Pollitt *et al.* (2007) and Crisp *et al.* (2008) who aim to construct questions that ensure “students are trying to do the things we want them to show us that they can do”. When candidates are unable to understand a context or are offended by a context in an examination they are disadvantaged.

The writers and users of case studies who participated in this investigation could be considered to have a vested interest in promoting certain features of a good case study. However, the foregoing comparison with some of the current literature, especially that which is critical of some aspects of the use of case studies (Pollitt *et al.*, 2008) demonstrates the broad perspective taken by the participants. This lends validity to the findings.

Participants in the current investigation identified a dynamic storyline as a feature of a good case study. This is in agreement with the advice offered by Erskine *et al.* (2003) and Naumes and Naumes (2000) for case studies used in tertiary education. However, in the light of work by Ahmed and Pollitt (2007), the desire for a story needs to be tempered with the knowledge that too much irrelevant context only serves as a distraction to candidates that prevents them accessing those cognitive processes that the questions are seeking to activate. Hence a further feature of a good case study is that it contains sufficient detail for candidates to respond to the questions, and no more. This is equivalent to the ‘focusing context’ of Ahmed and Pollitt (2007). The detail provided in the case study should all be relevant to the context, but the selection and use of individual pieces of detail will demonstrate candidates’ higher order skills. So, a multilayered story containing sufficient detail presented in a variety of ways is appropriate for a case study in summative assessment. Redundant data, the use of which would not be rewarded in the mark scheme, should be avoided.

There was a dissonance between how much of the information provided in a case study students thought they should use and how much the examiners and teachers expected them to use. Students believed that all of the information should be incorporated into their responses. Whereas the examiners wanted students to select information and data that were appropriate to their decisions and recommendations. Perhaps more guidance could be offered to students and teachers on how to tackle case studies within the Examiners' Reports.

Given students' familiarity with mark schemes, it may also be worth exploring the feasibility of including a response outcome space that shows the different ways of responding to the questions with the higher maximum marks (probably 15 marks and above) in the manner described by O'Donovan (2005). Doing this would have the advantage of passing the new information on to examiners, teachers and students in the same document. This would also assist with promoting the seventh feature of a good case study: coherence of examination materials.

The fact that students and teachers discussed how they used case studies in both formative and summative assessment may be a limitation of this research. As the aim was to investigate the use of case studies in summative assessment the facilitator provided conversational prompts to direct participants' attention to the summative mode. The examination materials used in the comparison exercise assisted with this direction. In reporting the results, reference was made to formative assessment only when such reference was useful to identify the features of a good case study in summative assessment also.

A second limitation to the study was the inclusion of only examiners from business subjects in the focus groups and interviews. In comparison with other subjects, business has a large pool of examiners who write case studies. Therefore, it was reasonable to request participation from business subjects only for the examiner group. Also, as this study was conducted at the height of the summer marking season, it would have proved difficult to gather together examiners from different subjects. A positive aspect to the examiner groups was that they were representative of all levels of qualifications.

The different uses to which business subjects and geography put case studies may also be regarded as a limitation of this investigation. However, it appears that the different experiences and insight that the students and teachers of the two subjects brought to the focus groups has revealed features of a good case study that are common to the two subjects. The new specification GCE Business Studies contains a synoptic unit that requires candidates to bring a toolkit of case studies into the examination, in a similar manner to geography examinations. Therefore, the outcomes of this investigation are applicable to case studies in general.

## **CONCLUSIONS**

A qualitative investigation of the opinions of those who write case studies (examiners) and those use case studies (students and teachers) identified seven features of a good case study. According to the examiners the purpose of a case study in summative assessment at GCSE and GCE is to provide a context which can be used to assess the higher order skills they associate with application. These higher order skills include analysis, selection, evaluation, judgement and decision-making. The seven features of a good case study that is capable of providing a vehicle to assess the necessary skills are listed below: a realistic contemporary context; an understandable context; a neutral context; a dynamic storyline; the creation of choice within the case study; sufficient information; and, coherence of examination materials

(case study, questions and mark scheme). These features are consistent with the characteristics required of any assessment, namely, that it should be valid, accessible, fair, able to differentiate across the ability range and pitched at the correct level.

The seven features will provide the basis of guidance on the writing of case studies. Such guidance will aid the production of high quality assessments that use case studies. It will also ensure a consistent approach to the writing of case studies. This in turn will provide a consistent assessment experience for teachers and students who use case studies in more than one subject.

Two further recommendations are made based on this investigation. (i) Where possible writers of case studies should try to make them proof against changes in external conditions. The manner in which this is done requires further discussion between examiners and subject managers. (ii) Offer guidance to students on how to tackle case studies, through either or both of the Examiners' Reports and the mark schemes.

With the introduction of Question Paper Functioning Reports (QPFRs) there will be scope in the future to use statistical data to analyse the performance of case study based items. Questions around the relative performance of case studies with different contexts, varying amounts of detail and the contiguity of case studies with the associated items and mark schemes may all find an answer within the QPFR. The provision of performance statistics for question papers could become part of the development of a network of practice for item writers based within the item bank application provided by AQA's technology partner.

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## APPENDIX A

### CASE STUDY INVESTIGATION FOCUS GROUP SCHEDULE

#### Introductions (5 minutes)

- Introductions – who we are.
- Outline purpose of research; explain aim of research is to produce a set of guidelines for writing case study items.
- Outline their rights as participants; data will remain confidential, participants will be made anonymous, right to withdraw themselves and their data at any point.
- Ask them to fill out consent forms.
- Provide contact details of researchers.
- Outline some guidelines for the focus group:
  - all views are of interest; do not wait to be invited to speak
  - try not to talk over each other (for the recording)
  - group discussion – researcher is mainly an observer
  - no right or wrong views
  - discuss practicalities (hour and a half long session)

#### Group discussion part 1 (25 minutes)

- Switch on tape recorders. Ask participants to state their name and role (to help distinguish between voices in the transcription).
- **Stimulus question:** What is a case study item?
- **Stimulus question:** What is the purpose of a case study question?
  - **Prompt:** What is a case study question asking candidates to demonstrate?
- **Stimulus question:** What makes a good case study?
- **Stimulus question:** How do you or would you go about drafting a case study item with the case study and its associated questions?
- **Stimulus question:** What are the problems associated with setting case study questions?

#### Stimulus material (10 minutes)

- Use case studies from past examination papers; both GCE and GCSE
  - One from a business studies subject
  - One from a social sciences subject
  - One from an arts subject
  - One from a geography/leisure & tourism subject

#### Group discussion part 2 (25 minutes)

- **Stimulus question:** What comments do you have about the case studies you have looked at?
  - **Prompt:** What are the differences and similarities between them and also in comparison with what you already write?
- **Stimulus question:** What makes a good case study, in general terms?
- **Stimulus question:** What sort of questions should be used with a case study?

#### Probing techniques

- Ask in general if others in the group share the same opinion.
- Repeat some, or all, of the question.
- Ask for group's thoughts/more details on a particular point that has been made.
- Use expectant silences to allow the group time to reflect further on the issue.
- Highlight differences in views and encourage the group to explore and explain them.

#### Closing (2 minutes)

- Ask if participants have any further comments.
- Thank participants for taking part.
- Switch off tape recorders.