

**THE BENEFIT OF SCREEN
RECORDED SUMMARIES IN
FEEDBACK FOR WORK
SUBMITTED ELECTRONICALLY**

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Abstract

We show that using screen recording with simultaneous commentary can be successfully delivered as feedback on a large undergraduate course. We found that it was most appropriately delivered as a summary given at the end of conventional written feedback. In this way the strengths, weaknesses and options for remedy could be delivered to the students in a way that might be more engaging than if the same information was written. Students rated the overall quality of feedback more highly if it were in video form. Some markers had great facility with this method, but others found that they needed more practice. The system worked with Microsoft products, *Excel* and *Word*, and was integrated with screen recording software (*Camtasia* from Techsmith) in a seamless package that launched with button clicks.

Introduction

The National Student Survey, commissioned by HEFCE, has highlighted that the deficiencies in quality and speed of feedback is a source of dissatisfaction amongst many students. This dissatisfaction centres around slow speed of return of feedback and its limited extent. Yet there is research evidence that students do not engage much with feedback when it is given (Crook *et al* 2006; Hounsell 1987). It is perhaps too facile to say that if the quality of feedback were better, students might engage with it more. Might the form of feedback itself, usually written, be part of the problem?

As an analogy consider the following scenario. You print out a paper that sits on your desk waiting for you to find time to read it. The fact that it is there for whenever you want to read it does not create any sense of urgency that it will disappear. What will usually happen is that the paper gets buried, or misfiled with the other papers that flow over your desk, to be found one day when it is no longer relevant and then be binned. Might marked work, with written feedback be treated in the same way by students?

A further problem is that students may misconstrue written comments. Our own analysis of a survey of a large first year biology course shows there is a recurrent theme that some students consider some annotations to be unfair. This perhaps comes from the necessarily condensed nature of annotations, which might appear curt. We reasoned that students might misread antipathy or sarcasm where none was intended, in much the same way as e-mails can be also be “taken the wrong way”. One way around this is to give verbal feedback, which might best be done in addition to the handwritten comments but which replaces a summary paragraph. If the same information was presented in a human voice, students might be less likely to misconstrue and to engage with the feedback better.

The idea of using audio commentaries to deliver feedback on written essays is not a new one. As early as 1972, audio tapes were being used as a means to deliver feedback to students (Coleman 1972). Their use does not necessarily benefit the markers in terms of length of time taken to mark an essay but there is an immediate benefit to students in that the amount of feedback produced during the audio comment is much more than is produced, in the same time, in a written comment (Kirschner *et al* 1991).

Currently, there are a number of technological or software solutions which would allow for the provision of this type of feedback to students. Handheld MP3 recorders (Rotheram 2007), *Adobe Acrobat* and *Microsoft Word* (e.g. Still 2006) and sound recorder software on PCs to record audio comments (Merry and Orsmond 2007). In each of the cases cited above, students reacted favourably to the audio comments that were made available to them and appeared to engage more fully with this form of feedback than they did with written comments alone.

Nevertheless audio feedback has a drawback in that the student doesn't directly see the elements of the essay to which the marker is referring. Written and audio feedback only cater for two of the four learning styles, namely reading and auditory, without catering for visual and kinaesthetic styles as defined by the VARK schema (Fleming and Mills 1992). Until recently, it would be hard to envisage how we could include visual feedback, due to lack of computing power, affordable disk space and bandwidth. Russell Stannard (2006) at University of Westminster has used screen recording software that allows a simultaneous oral commentary while correcting grammar and spelling in essays in a course on English as a foreign language. This brings a visual dimension and also an immediacy to the feedback because the student hears the marker's comments in context as the work scrolls before their eyes.

We appreciate that this method would work well with a relatively mechanical process such as correcting grammar and spelling. We were less convinced that such a method was generally applicable, particularly to more discursive essays in which a marker would spend long periods in silence, either in grappling with complex arguments or in constructing a measured reply. However we did think that an audiovisual commentary would be appropriate to give at the end of the work, where the markers should draw general

conclusions about the best and worst aspects of the essay and where advice on remedial action should be given.

Accordingly we have implemented video recording of remarks in our tool for electronic marking. This was used to provide video comments for 90 students. During this exercise we collected survey information on the reactions of students and markers.

Extension of Existing Marking Tool

As reported by McLaughlin *et al* (2007), a bespoke marking tool had been developed for the School of Biology, University of Edinburgh, based on *Microsoft Office 2003* applications. We extended the functionality of this tool to allow not only the marking of electronic versions of student essays but to enable the capture of a video commentary by markers on each student's work.

We selected *Camtasia* (by TechSmith) over a number of other screen capture applications, both commercial and freeware, for the following reasons:

- the confidence and security of using software developed by a major company in this field
- the ability to use command line instructions to control the major operations of the screen recorder
- the ability to bulk convert the produced video files from large AVI files to much smaller Flash (SWF) files for delivery to the students

Macros were then written in Word to allow markers to start, pause and stop the screen recorder at the click of a menu button. As the video files had to be stored in a common location to allow for the bulk conversion from AVIs to Flash files, and markers did not directly interact with the *Camtasia* interface, the stop macro also included instructions for the association of the produced video file with the essay being commented upon. This allowed the markers freedom to mark and comment on the essays without having to worry about the details of how the process was carried out.

In order to record their commentary, markers were provided with a headset consisting of headphones and microphone. They were also provided with a commenting guide that they could use to give them an idea of the kind of feedback that they could provide and a way into the commentary for less confident users. Accordingly we produced a rough script of how the summary should be given (Appendix). We did not mean this to be given verbatim: rather we expected markers to use it as a basis to form their own script. The example script was compiled from the stored comments from a previous year made by an experienced marker. In forming this document we aimed to improve some of the negative experiences that students had reported in the survey we had done in that year on students' reactions to their feedback. Thus we considered that it was important to greet the student in some way at the start and to start by saying something positive, if this were possible. We

made a conscious decision not to appear to justify the mark as the focus should be on how to write a better essay rather than how to achieve good marks. Finally we decided to impress on the student that this feedback was only part of a continuing process and we hoped that they would refer back to it when they were to write a future essay. It seemed appropriate to finish by wishing the student well in these future opportunities to practice what they might have learned in the exercise.

A macro was also provided in *Word* and in *Excel* to allow the markers to view the video commentaries that they had made in order to reassure themselves that the process had worked as intended. In this case, the markers were using *Microsoft Windows Media Player* to view the AVI file.

Implementation

As this was a rather radical idea for most of the markers, the decision was taken to allow the markers to choose for themselves whether to try out the video commenting or not. Since markers' time was valuable we considered that if they were to do video commenting there should be something that it should replace. Accordingly they were given the option of foregoing the writing of their overall comment on the essay if they instead made a video commentary.

Since the software was an extension of *Microsoft Word* and *Excel*, training was not as involved as it might have been. We had a one hour session with markers in which the software and hardware were demonstrated. They were then given a manual, with extensive use of screen shots, that we had written on the operation of the tablet PC, the marking software and the recording aspect. Following this, markers seemed to have no technical difficulties and all returned their work within the week deadline without needing to consult us further.

In the end four out of twenty markers used video commentaries. This covered 90 students out of around 490 (close to 20%). Some markers delivered roughly an A4 page worth of comments in about two minutes. It would require a speed of over 150 wpm to type this, notwithstanding that the nuances communicated by tone of voice would be lost.

The uptake in creating video commentaries was disappointing but not surprising in hindsight. A survey of markers showed that there were a number of good reasons for this:

- because of time constraints, the markers were not given an opportunity to have a practice with the software – ideally they would have been given this opportunity to develop their confidence before having to mark essays for real (two of the markers who did eventually use the system fully were senior members of staff who were shown it in advance to give us feedback on how to amend it)

- some members of staff were sceptical as to whether this form of feedback had any intrinsic worth
- some of the postgraduate markers cited time as a problem – they didn't feel they had time to learn the system and the time taken to make satisfactory comments would be too long for the period they had set aside for marking

On completion of the marking exercise and the return of the marked essays and video commentaries to the students, both staff and students were surveyed anonymously to find out their attitudes to the tool and the feedback received. In the case of the students, two surveys were created – both with a common core, with one having an extra section on the video commentary, given only to those who had received a video commentary.

Discussion of Survey Results

Survey response rate

Of the 90 students that received video feedback, 35 (38.9%) took the survey. Of the 394 students who did not receive video feedback, 115 (29.2%) took the survey. For the staff survey, 11 out of the 19 markers that marked electronically responded to the survey (57.9%).

Differences between students receiving video feedback and those who did not

As seen in Figure 1, the students who received video feedback were more likely to consider the quality of feedback that they received better than expected (45.7%) than those who didn't (37.4%). At the other end of the scale, none of the video marked students felt that the quality of feedback was worse than expected, while roughly 1 in 10 of those who had written comments only felt that this was so.

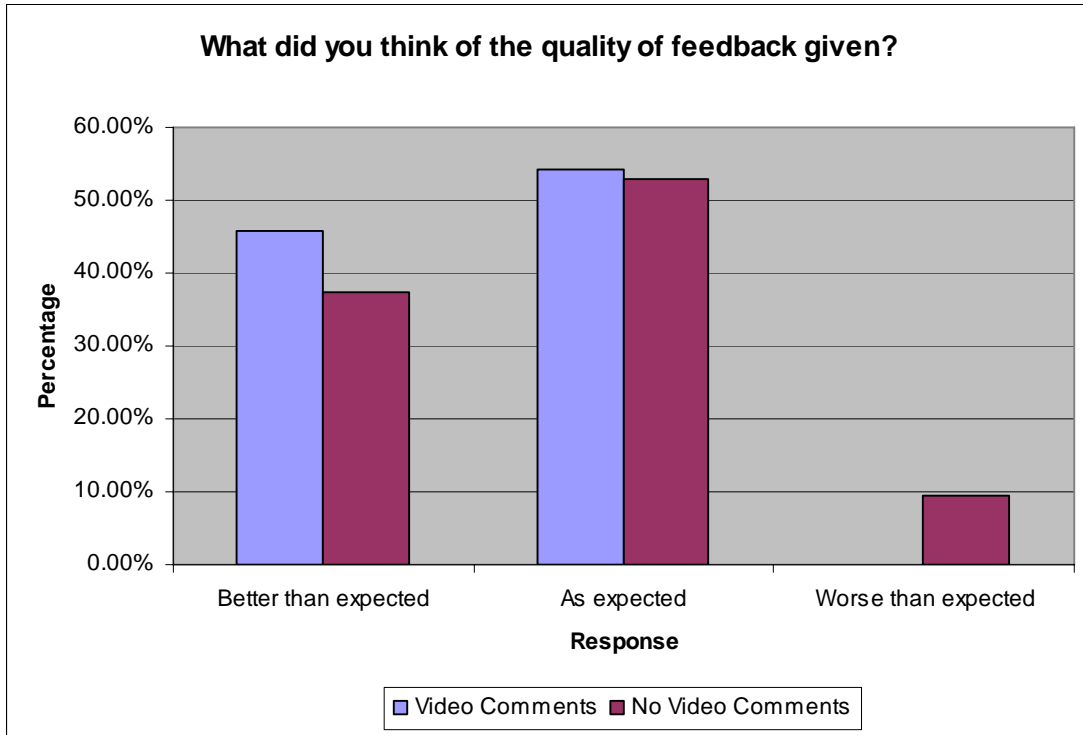


Figure 1: Student appreciation of the quality of the feedback given

Figure 2 shows how the students felt about the amount of feedback received. Disappointingly, the students who received no video feedback were more likely (46.1%) to report that the amount of feedback was more than expected compared to those that did (31.4%).

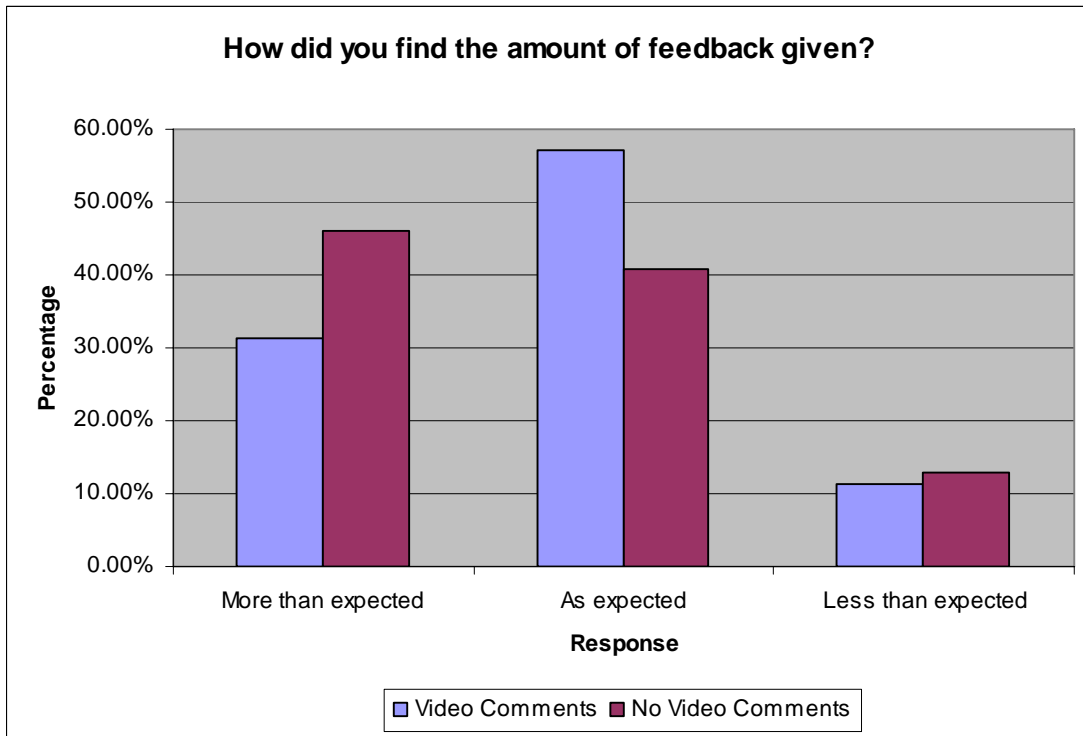


Figure 2: Student appreciation of the amount of feedback given

The biggest difference in the attitudes of the students came when they were asked to consider if they felt the comments applied generically to their essay writing skills (Figure 3). Of the students who received video feedback 62.9% felt that the comments made applied to their essay compared 37.4% of those students who received no video feedback. This could be due to the students engaging much more with the video commentary as it allows them a greater connection with the marker and their attitude towards essay than is possible through written comments alone which are open to differing interpretations.

This is reflected in some of the comments made by the students:

- "... I properly listened to what my marker was saying, whereas I only skim-read the hand-written comments."
- "... I think the points and overall mistakes of the essay were better conveyed in the video feedback in comparison with the written feedback."
- "It allowed the marker to say more about how my essay could be improved and made it easier for me to understand the marker's suggestions."

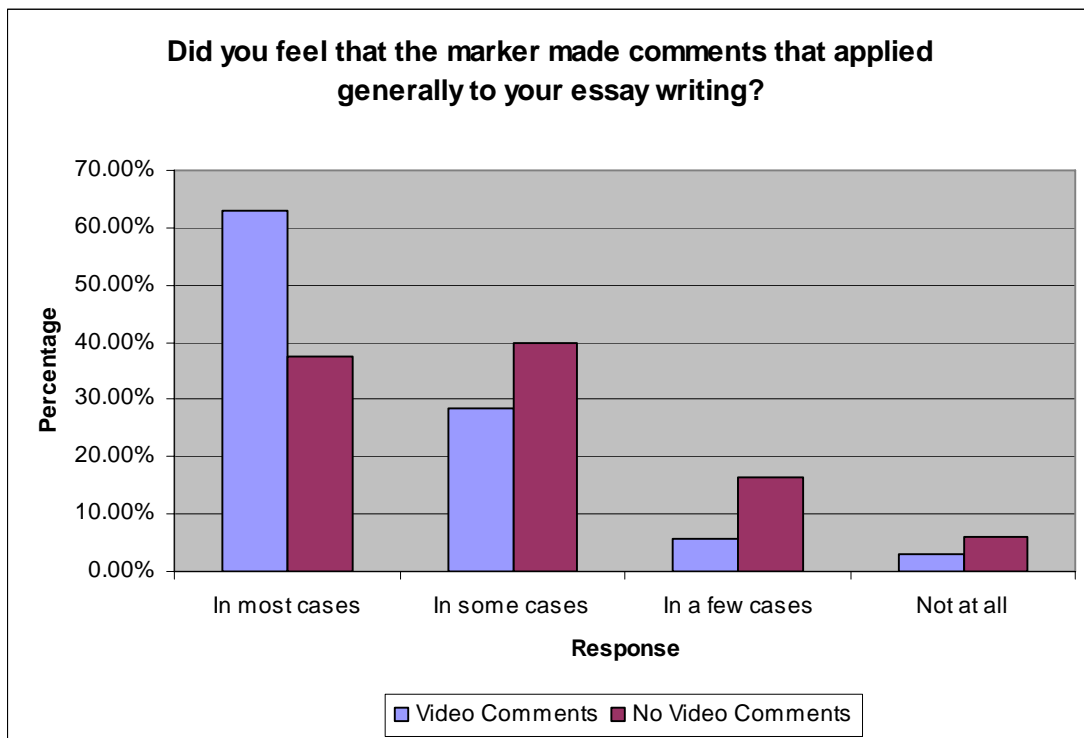


Figure 3: Student attitudes of how the comments related to their work

Although student satisfaction from both groups was high when asked to consider whether they felt the marker spent enough time on their essay and if they had been treated as individual, in the case of the students receiving video feedback it was 100% in both cases.

Comments received about the use of video feedback

The use of screen capture software to make video comments was more natural to some of the markers than others. Of the four markers that persevered with the method, one tended to make short comments (25 seconds on average) and, along with another of the markers, was quite stilted and self-conscious in his delivery. The other two, however, had a more natural, easy style and tended to make fuller comments of 2-3 minutes in length. This difference in styles is reflected in the student comments as to the usefulness of the video commentary.

On the negative side:

- "... it could just have easily been typed into my examiner's written remarks. ... I would question whether its cost is worth two sentences."
- "I was ok with just the written feedback as the video feedback was exactly the same."
- "My video feedback was only one sentence."

More positively:

- "I found it a lot more useful than the handwritten feedback on my essay"
- "I thought it was quite helpful and gave me a better understanding of where I went wrong and which points were correct."
- "I thought it was very useful, it made me look more critically at the essay and it helps considerably in seeing why the marker has given a certain mark and knowing exactly where you went wrong."
- "It was helpful as it gave more in-depth feedback than the comments alone."

Despite the shortcomings of some of the feedback, when the students were asked about the performance of their marker in the video commentary 88.6% replied that the marker's performance was either very good or good. Only 5.7% reported it to be poor. Additionally, when asked if they would have preferred written feedback to the video feedback 74.3% replied no.

Overall, the exercise of providing video feedback seems to have been a success with the majority of students gaining some benefit from it – even if it was only a reassurance that the marker had taken some care over the marking of their essay and had considered it individually.

Comments from markers about the use of video feedback

Those markers who did not use the video feedback feature were asked to explain under what circumstances they might consider using it in the future. The main reason given for not using it was time pressure – the markers were given little over a week to mark the essays.

- “I would if I had more time. I would have liked to use them. I was, however, trying to finish the task asap.”
- “Less time pressure in getting through all the essays”

Others, however, were less forgiving of the exercise.

- “Nothing. I think it is a pointless measure. There is no need for the students to receive audio feedback – written comments are sufficient. It is then up to the students to read them.”

However, those that did use the feature were generally positive about the experience.

- “I found this a more natural way to give feedback on the general structure of the essay. A bit like one to one feedback.”
- “It was relatively easy to do if I spent a few minutes first just rehearsing the points I wanted to make, ...”
- “... the ability to leave spoken comments has, for the first time, made this an improvement over paper and pen, rather than just an attempt to imitate it.”

Conclusion

It is clear that the recording and delivery of feedback is technically possible, and that disk space, processing power and communication speeds are adequate. Within the three week period that the University promises, we were able to deliver all 480 scripts back to students, 90 with videos, all with moderated marks. Now with more familiarity we could envisage that we could cut the time between submissions to return of marked work to two weeks.

Of those students who received a video summary roughly three quarters would still prefer that over a written one. This is despite half of the video commentaries being rather shorter and more stilted than we would have liked. More of those who had video commentaries rated the quality of feedback to be better than expected compared to those who had written comments only. Moreover there are enough positive comments to suggest that it is not unethical to try more iterations of the method, even when not all markers will yet buy into it

Clearly we need more markers to opt to use the recording. Certainly the response of students and the examples we have of good practice are persuasive evidence. Our initial guidance notes (Appendix) seem sensible and are borne out in some of the better examples. Based on these, we would now add that the marker might begin by welcoming the student. This sets the tone for the feedback. Merry and Orsmond (2007) point the importance of tone and how it is easier to express subtleties of thought better orally, such as distinguishing possibilities for a change from an imperative. These aspects might be grouped in the term “socio-emotive” (Whitelock and Watt, 2007).

Although we have good examples, we feel that by persevering for a few years we will be better able to establish the principles that uniquely distinguish good video feedback from other forms. Yet already half of the markers who tried were fluent and impressive. Moreover they found the method natural and satisfying. It remains to be seen if such people are “born” or whether the facility can be acquired. There may be cross-fertilisation from aspects of media training that might help.

In our next trial we would like to investigate whether the visual aspect actually adds anything over an audio commentary. Might the audio commentary, as the old joke has it, be like a radio play: it has better scenery. It should be possible to show the same essay to different students with the video summary, or with the video summary in audio only, or present a transcription only. With larger numbers to survey, it would be interesting to find if dyslexic students as a group find audiovisual feedback more amenable than written feedback alone. Ironically, audio feedback might require more engagement from the student to summarise what the marker said. They might even have to take notes (!). It is difficult to determine whether more engagement takes place. But even if there is not, there do appear to be some indications that students perceive that feedback is of higher quality and that they have a confidence that their work has been at least adequately commented upon. Even if the only benefit were that the student felt that marking was less impersonal, the technique would be worthwhile for that alone.

Acknowledgements

The authors would like to acknowledge the support of the University of Edinburgh’s Principal’s eLearning Fund and the Higher Education Academy Centre for Bioscience Departmental Teaching Enhancement Scheme to this work. We thank Nora Mogey who drew our attention to Russell Stannard’s original use of *Camtasia* for correcting grammar mistakes. We would also like to thank those staff and students in the University of Edinburgh, School of Biology who participated in the surveys.

Appendix

Video Feedback

Principles:

- A short message that **sums** up, but does **not repeat** other comments;
- brings out anything **positive**;
- points out the main **shortcomings**;
- proposes remedial **action**; and
- encourages student to **revisit** feedback before tackling the next essay

Avoid discussion of the mark itself and don't feel that you have to justify it. The emphasis should be more on the quality of the student's work.

It is a particular, but rare, problem to explain how a 80% + essay can be improved. Some ways could be:

- Emphasise that it is a very good mark and rarely given
- That the student didn't particularly lose marks, but didn't reach the almost impossible high standard of a 90% + essay
- That an essay that was 90 % + would show such insights and original thinking that it would be publishable, with only minor corrections, in a scientific journal. We can't tell you what those insights would be because by definition they would be original.

Practice:

- It is best to record in one take.
- Don't be a perfectionist. You don't have time and the student should feel privileged to be getting such individual attention anyway that any slips don't matter.
- It is hard to read a script and to manipulate the screen at the same time. Don't feel you have to, unless you are good at it.
- You might start at the top of the essay and scroll through as you say that the student obviously put a lot of work into it. This gives a sense that the recording is live and that you have considered their essay. You might continue your script where the window shows the marks sheet.

Positive	I can see that you put a lot of work into this essay. I enjoyed reading this essay.	
Link	...but your effort would have been (even) better directed if youthere are just a few points that would have improved it... ...there are a few points that I made in writing that I'd like to expand upon ...	
Shortcomings	Answer Directly	...tried harder to answer the question directly . It is a common mistake by 1 st year students to “put everything down” in the hope that the reader will make sense of it. But in a scientific essay you have to marshal the material into a coherent argument that builds up to answer directly the question. When reading each paragraph ask yourself “Is this a digression from answering the question? Am I just avoiding answering by writing around the subject without really understanding it”. In that case making an overview for yourself in note or diagrammatic form may help you to clarify the question and your argument . Talking it through with other students will help, although remember that your subsequent essay should be in your own words. Above all, make sure that you understand what you write.
	Rely too heavily on websites	...not relied so heavily on websites. These can be published by anyone, without being checked by other scientists. They often contain errors . Moreover, the web address often changes. In that case your referencing will be worthless to someone in the future who wants to build on your work. (For the same reasons it would not even be a good idea to reference lectures given by staff on this course!)
	Wider variety of sources	...used a wider range of sources. Elementary textbooks, in which I include Campbell and Reece, cannot be expected to contain all the information to answer this question. You should be looking at more advanced textbooks and even scientific reviews. If you don't know how to go about this, look for help at “ Finding Reading Material ” on the ISIS course on your myWebCT page.
	Improve writing style	...improve your style of writing. This takes time and practice. But you can help yourself by reading scientific reviews. Those in Bioessays , for example, are relevant to this course. You might also read “ News and Views ” essays in Nature, which are short and should be accessible to a wide scientific audience. You might also look at the “ Writing ” section on the ISIS course in your myWebCT page. Amongst other good material, this contains specific help for Biology , written by Jim Deacon.
Finish	Learning to write a good essay is a process of trial and error. You can help yourself by returning to this feedback before writing your next essay. That way you will remind yourself about what you need to improve. So, I hope you found my feedback useful. Good luck with your next essay.	

Table: Example script distributed to markers

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