

## **Feed Forward: development of a podcast generator to deliver formative assessment**

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**Keywords:** *e-learning, feed-forward, formative assessment, pod-cast, screen capture*

### **Introduction**

This study considers the provision of high quality and in-depth feedback, to suit students' requirements, by using multi-modalities across online and mobile platforms. The focus is on the students' ability to receive, assimilate, understand and act on feedback.

Usually feedback is provided from the tutor to the student in a written form. In this study, initial feedback was provided in workshop sessions during a module on Multimedia design. That context encouraged a dialogue between a tutor panel and a student team with reference to visual material on computer screen relating to the students' assignment, which entailed the design and development of a multimedia application. This feedback was recorded and then delivered online so that students could access it, repeat, consolidate and use it to feed and nurture their work in development – as a 'feed forward' mechanism.

The paper addresses two interconnected themes: firstly, the creation, design and production of an online application - the podcast generator - and other related applications; secondly, an investigation towards enhancing the learning strategies of feedback and 'feed forward' in the context of teaching design and development production.

### **Context**

Tutor teams teaching multimedia within the Faculty of Computing use a complex range of scaffolding models for design and development of multimedia applications to track the development of multi-disciplinary skills. These include the design-orientated RADSE model (research, analysis, development, solution and evaluation); the business-facing CTBP model (creative, technical, business and production streams), and the software development model for iterative development, design, development, and iterative testing. Tools such as technical logging of methods and

problem-solving, creative sketch-books and storyboarding/flowcharts, and IP documentation are also necessary.

During the design and development of a multimedia application, feedback can be drawn from a variety of scaffolding models. Gaps and omissions in the work or the need for redesign and reworking are indicated by any or all of these structures and tools. Formative assessment, as a learning tool, enables appropriate development and yet flexible use of these scaffolding models and their specific language.

Observation indicated that a few students with fragile skill sets lacked confidence and were overwhelmed by the feedback session. They also were unable to retain any detail or structure information. How can the complexity of the skills needed for design and development projects be assimilated by students with fragile social and academic skills?

Students who did engage and benefited from these sessions were able to use dialogical techniques such as repetition, consolidation, test and re-test, and to structure information using visual sketches and note-taking, paraphrasing, categorizing and summarising. Whilst written forms of feedback may use structuring devices such as headings and paragraphs etc, can video and audio feedback be structured so as provide a consistent framework that will enhance student learning and reflection?

## **The application**

This project attempted to transfer this pedagogical dialogue between tutor team and the student team during workshop sessions onto an online and potentially mobile platform as part of a blended learning platform.

An application was designed to allow staff to upload feedback for podcasting - the London Met 'Podcast Feed Generator' enables the creation, editing and posting of feeds. Feeds can be either video, audio or text. Data is recorded in a database and files are uploaded to the podcast section of the university server. Privacy is facilitated, as the application is password protected so that students are only able to view the feedback that has been submitted for them.

## **Key role of formative assessment**

Previous research in developing assessment as learning strategies (Kendal 2005) indicated that students' learning experience and academic development were impeded by low resilience, a limited cultural experience, minimal English language skills and a lack of confidence needed for independent learning. King (2006) identifies similar factors, noting the effect of resilience, helplessness, control orientation and set on academic achievement. However, as Kendal (2005)

demonstrated, the development of independent learning can be enhanced by formative assessment. Wang (2007) indicates that the purpose of formative assessment during teaching is to illuminate learner difficulties and enhance teacher effectiveness. Buchanan (2000) shows that the test-learn-retest cycle can be enhanced by an ask-questions strategy, thus enabling the student to own and control the process. Myhill and Warren (2005) consider how critical moments of discussion in the classroom can offer scaffolds or constraints. These various studies indicate that for formative assessment to maximise independent learning within the framework of academic development, it needs to be timely, appropriate in detail, structure and focus, and occur within the context of dialogue - enabling questioning, reflection and clarification, and offer a continuity of access.

## **Podcasting project**

The podcasting project sought to address these requirements by delivering formative assessment online to students, using video screen capture and audio recording of the feedback dialogue during workshops. A podcast generator application was designed and developed to enable this and provide timely and appropriate detailed feedback to students. The intention was that this application would provide a user friendly and accessible method for delivering video clips to non-specialist staff and students, by uploading compressed video clips to a server ready for the podcasting delivery platform.

## **Outcomes**

The project was piloted on two second-year modules during 2007/08. Students' opinion on the relative usefulness of online delivery of feedback was obtained through interviews, and questionnaires issued before and after the pilot.

From prior questionnaires it was established that students value feedback that is relevant and comprehensible, that encourages and is provided at early stages of assessment (see Appendix 1) and is captured in some way (if not written down). Student responses on the post-feedback questionnaire indicated that written feedback and the opportunity for dialogue with the tutors was the most beneficial aspect of the feedback process. However, there was an indication that the visual aspect of the video was beneficial to some students (see Appendix 2) and that the podcast helped some to improve their assignment.

In addition, students were asked to indicate at which stages in the development of their work feedback was most useful. Their responses indicate that feedback was most useful during the development stage, but could also have been useful during the earlier stages of the problem analysis (see Appendix 2).

From the tutors' perspective, it was clear that capturing feedback sessions for delivery online enabled the students to recall, digest, and re-use not only the feedback content, but also the language used to describe the design process, and interest developed within the dialogue between students and tutors.

Close textual analysis of the transcripts of the feedback provided during workshop sessions indicated five areas of dialogue:

- informational content
- form of delivery
- language and presentation
- creative thinking
- critical awareness and problem-solving.

This study of formative assessment, substantiated by previous research, indicates:

- benefits of screen capture in conjunction with other channels of feedback (Goodwin 2005);
- benefits and limits of scaffolding;
- the need for flexibility to enable humour, wit, and spontaneity, and process;
- the opportunity for dialogue enhances skills in reasoning, logic and inference as well as creative and forward thinking (see Pilkington & Parker-Jones 1996).

### **Further development**

A hybrid podcast feed and feedback database has been developed. Here the tutors can offer written feedback to the students by uploading this to the database, enabling easy and secure access to the individual student. Students are encouraged to respond by entering into an online email dialogue with the tutor.

Further development can address:

- using mobile platform products such as ipod and mp3 player;
- disseminating and testing the pod generator across different groups and teaching contexts;
- responding to the needs of the 'fragile' learner by a range of scaffolding tools;
- extending methods such as enabling consolidation through summarization, feeding back, further scaffolding, provision of language tools, additional structuring of teaching resources and feedback, involvement of student by using mobile technology - to enhance accessibility;
- enhancing students' motivation by using new mobile technology as a novelty factor and engaging the student as a researcher/collaborator in innovation.

Interested colleagues are invited to use, test and develop the alpha version of the podcast feed generator application, or to develop a hybrid scaffolding and language model. Prospective collaborators should please contact the authors.

## Acknowledgements

The scaffolding models applied in this project have been used in teaching design and development of multimedia applications as developed by the multimedia tutor cluster in the Faculty of Computing, over several years of teaching practice. Thanks go to the London Metropolitan University Learning and Teaching Innovation Fund, and Digby Warren and Steve Wilson in CAPD.

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## **Appendix I: Summary of identified benefits and issues of feedback**

Summary data from pre-feedback questionnaire that asked students about their previous experiences of feedback before the start of their project assignment

### **Student gains:**

Confidence to try learning new skills and developing skills, confidence in that you are going in the right direction,

Checking details,

Relevance,

Mutual understanding,

Note taking, needs to be written down with explanation to be consolidated

Critical analysis

More ideas

Helps the student if he/she is lost, or has gaps

Helps the student visualise ideas

What to do next, changes to make it better, or to add on more

### **Issues**

Feedback is not helpful:

- If not written down, if it is only verbal, it can be forgotten and not acted upon
- If not relevant, the tutor needs to give relevant information.
- If tutor or student do not understand or have shared objectives

Student sometimes does not understand the tutor's answers or responses.

Not all previous modules offered formative feedback

Difficulty in dealing with 'contradictory' advice from tutors

Student expects to be given information on how to do it and an answer to questions, whilst tutor requires additional evidence of independent analysis of problem-solving maybe through discussion with tutor or other expert or peer.

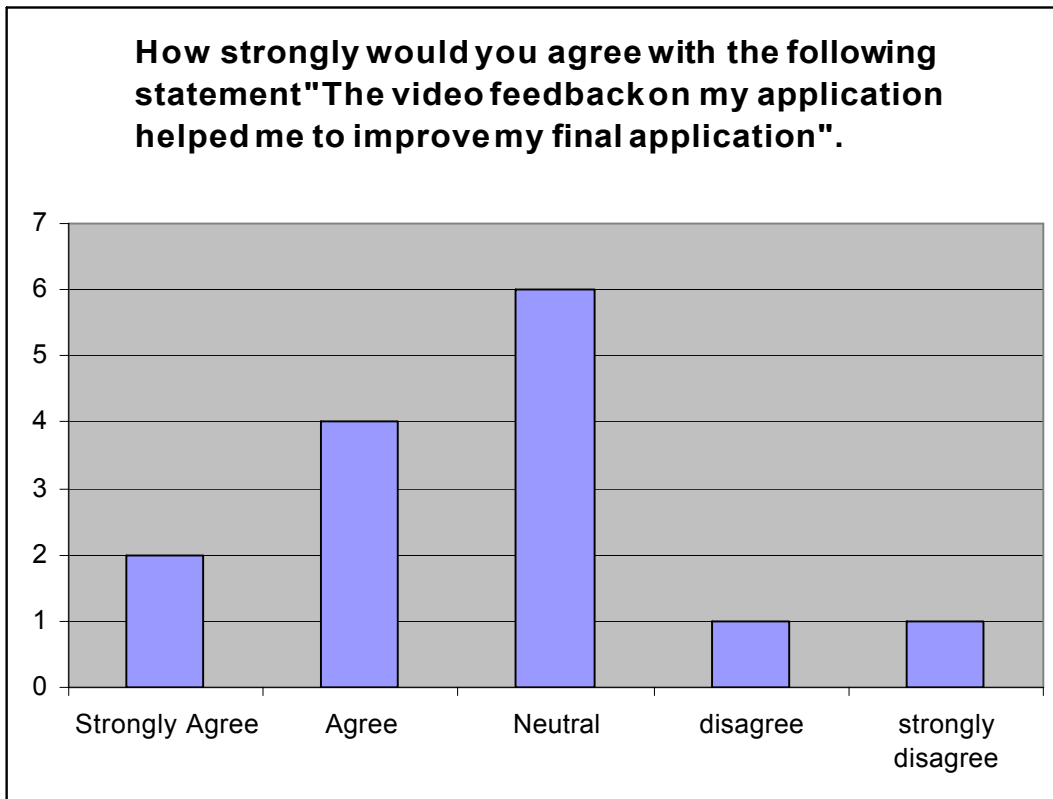
'Feedback can make me feel dull' - feedback can discourage or disappoint the student.

More ideas, can make the student have to start the work all over again? This indicates the need for early feedback and signing off the first stage of the development process, tutor panels, student active attendance and sign off at start of assignment.

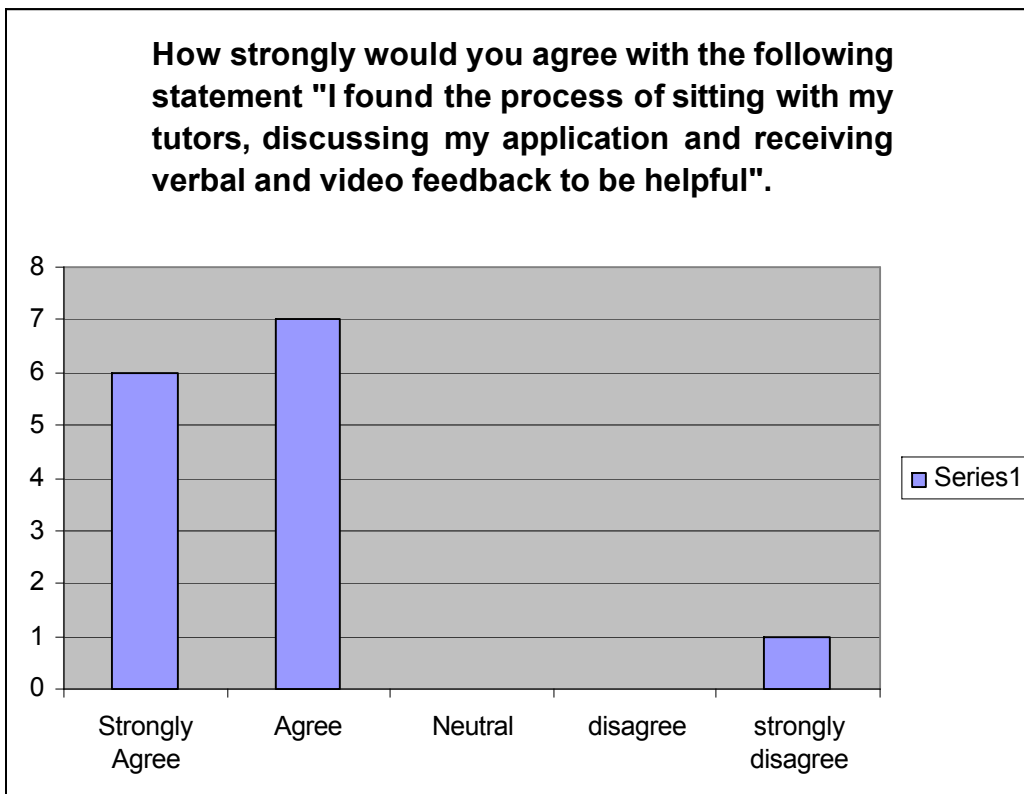
When it is really close to the deadline. Feedback needs to be discussed in the early stages of the assignment.

## Appendix 2: Data from post-feedback questionnaire

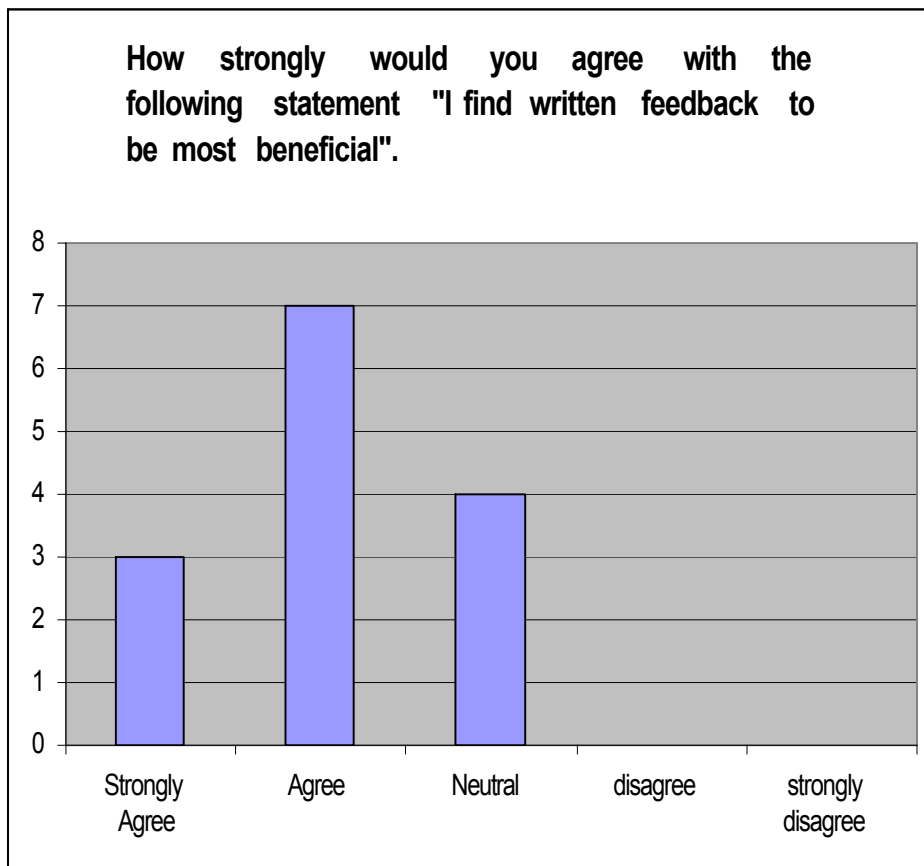
### Question 3



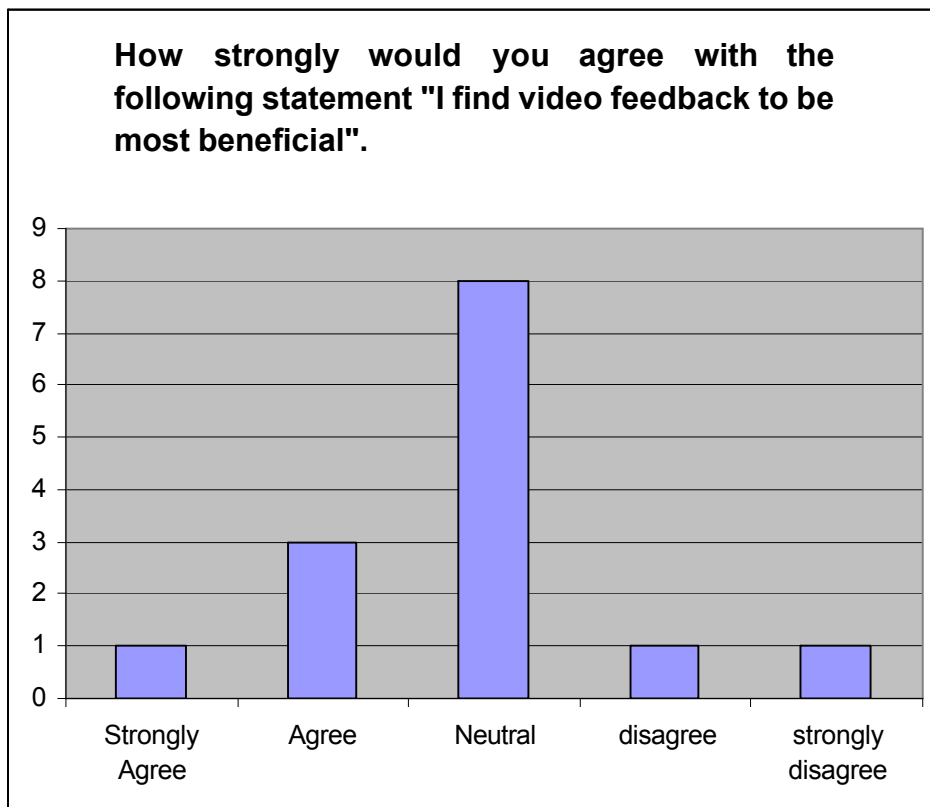
### Question 4



### Question 5

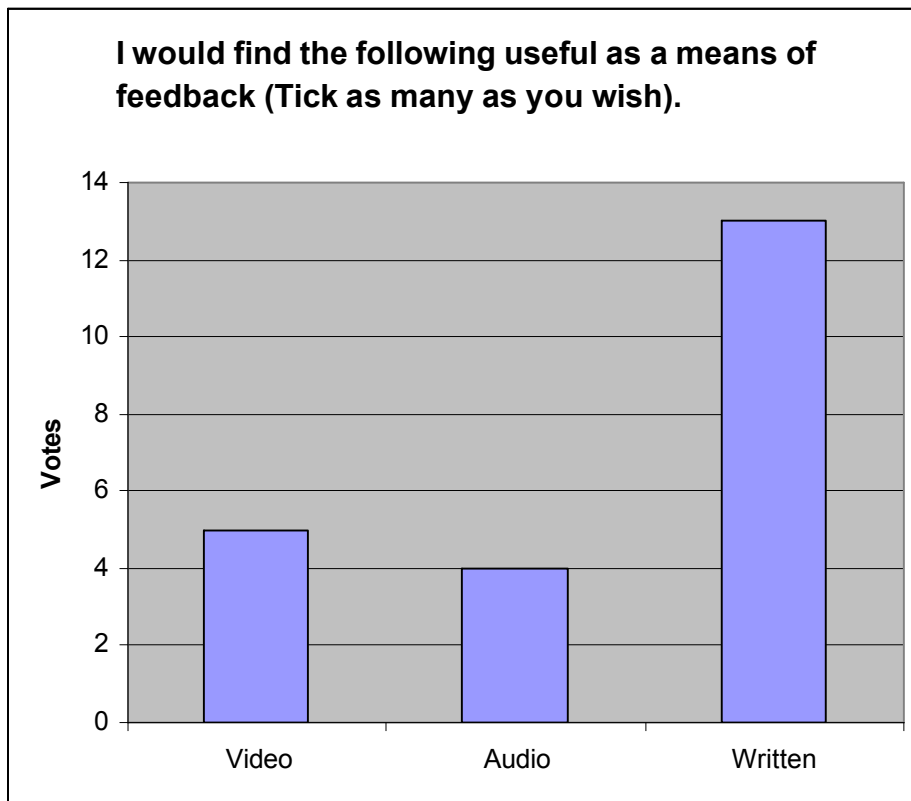


### Question 6

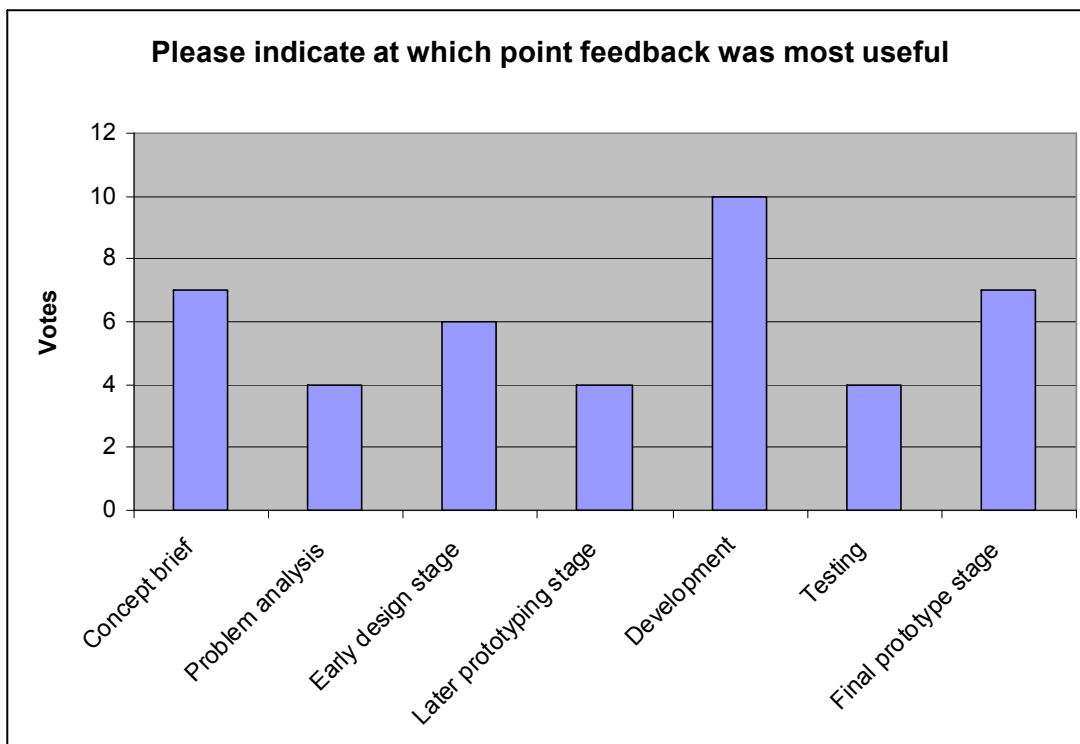




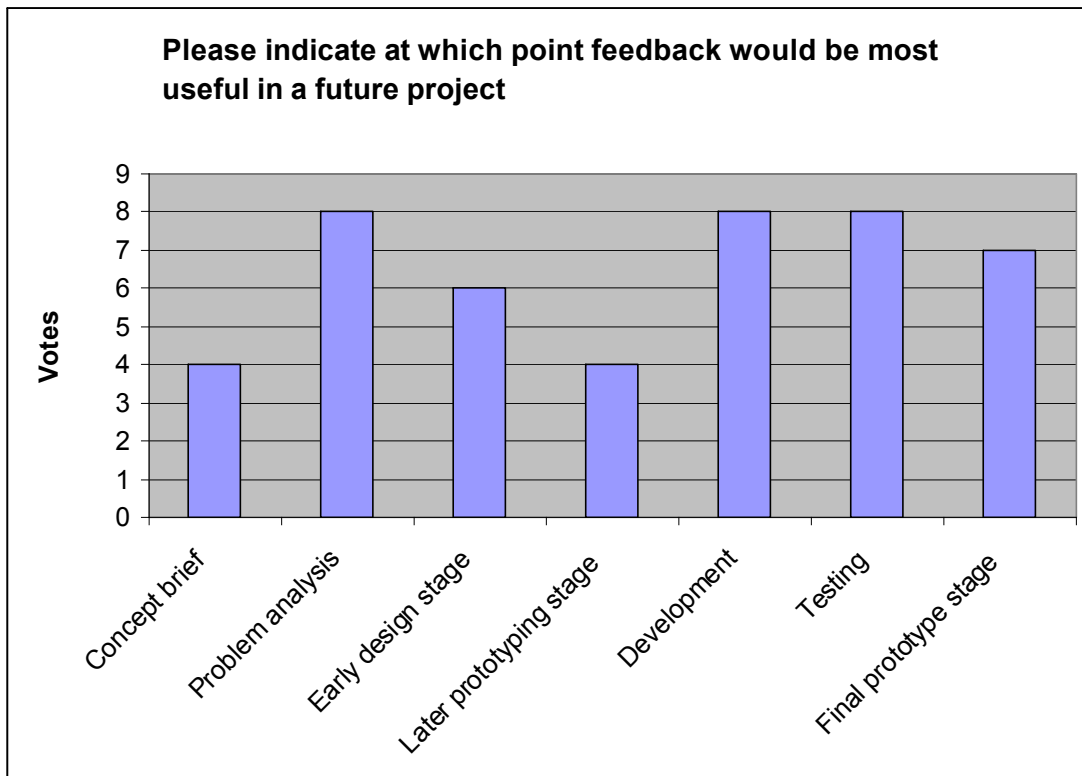
### Question 7



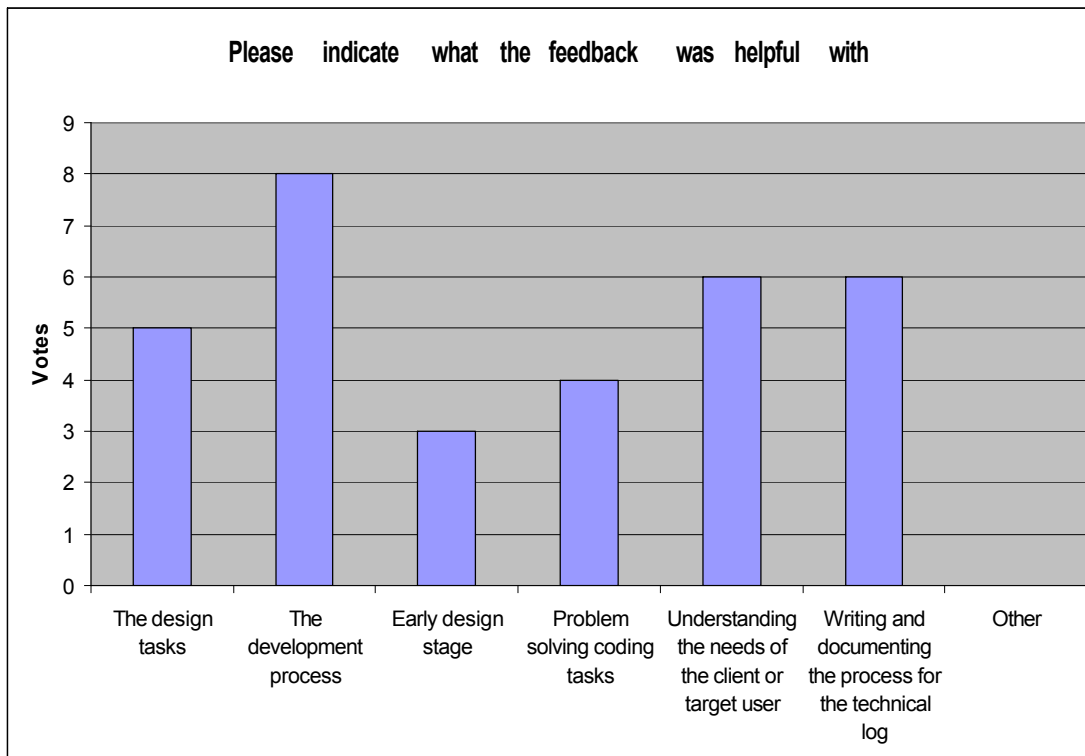
### Question 8



### Question 9



### Question 10



## Comments:

1. Overall the support and feedback throughout the module was helpful. It was obvious that both tutors were making a strong effort to offer feedback and it definitely benefited the outcome of our project. The areas where feedback was less prominent were in problem solving coding tasks (most coding issues were resolved using other resources) and documentation feedback.

Of all the multimedia modules I have taken, this offered the most productive feedback. Also the post-result feedback was extremely useful.

2. I found the feedback was very helpful, just wished I knew about it before.

3. I found that all feedback given at all stages of the project very helpful. It helped my group and I to consider issues that we hadn't considered and we were able to use the feedback to improve our work.

To be honest this is the first set of feedback that I have had from a project once I've handed my project in. I found it very helpful as it helps round up the module and allows you to reflect on the work carried out. You can then use this to further improve working methods/styles/output of other projects that you may work on in the future.

Q1- Any feedback is good feedback but I prefer written feedback as I can take time to digest it and re-read it if necessary. Easy access to this feedback is very helpful and encourages students/users to read it as it is easily accessible.

4. The concept of feedback application are strongly useful for student to avoid the same mistakes in other module, also help student understand what was expected from tutor. I strongly recommended this concept and surely it will 100% benefit student in their academic progress.