Many academics have suggested that multiple choice questions (MCQ's) are poor methods of assessment because they do not test the higher levels of cognition that are expected of university students (Scouller 1998). While Nicol (2007) recognises these limitations, he suggests that in order to improve their value you have to do more than simply write harder questions. He suggests that you need to manipulate the way in which they are used. His research draws on the work of Fellenz (2004) who asked students to design their own multiple choice questions. He found that by asking students to justify why answers or opinions were correct, or incorrect, resulted in a powerful learning experience, suggesting that this process encouraged deeper learning and understanding of the subject content. The focus of this research is to examine the practice and value of involving students in their own multiple choice question design and construction. The researcher examines the student's perceptions of this new pedagogical process and attempts to see if this experiential method has any impact on student learning.

The new approach to student learning and feedback was tested in a final year undergraduate Strategic Marketing module. There were n=88 students enrolled on the module and each was asked to create three multiple choice questions using the themes discussed during the module. They were required to produce 1 correct answer and 4 incorrect answers for each question, together with a short paragraph of feedback that gave the rationalisation for the correct answer. These were uploaded to the VLE for tutor to comment. The tutor gave individual feedback on the quality and level of the questions and additional guidance was provided on how to develop these further. The questions created by the students were used in a mock revision session two weeks prior to the end of module exam. The students that participated in the question creation task (n= 48) represented 54% of the sample and were known as the intervention group. Those that did not take part (n= 40) represented 46% of the sample. With the exception of the voluntary question task both groups received the same strategic marketing education programme. At the end of the final module exam students were asked to complete an attitudes and use of feedback questionnaire (AUFQ). A response rate of 77% was achieved. The questionnaire examined student perceptions of the process of involving them in MCQ construction and design. An independent T-Test was used to compare the final module grade for those that completed the task and those that did not. An independent T-Test was also used to make a comparison between the participant’s strategic marketing module grade and their overall average profile grade. The profile grade is the average grade given for the eight modules independently studied in the same year.

The results demonstrated that over half of the respondents (54%) completed the voluntary task to create three multiple choice questions. A small majority (54%) felt that this task was established to help them with their revision or to refine their exam technique. The following are some of the respondent's comments about why they thought we had asked them to complete the question design task: “To start a thinking process about what questions maybe potentially in the exam”. “So that we could revise the material that we had learnt”. “When doing questions it would make us think around how they may be worded within the exam”.

The students were asked whether they felt the question construction task prior the exam had helped them in any way to complete the final end of module exam online multiple choice exam. Just over half (52%) thought it had. Of most significance, is how, the students felt it had been useful. The following responses highlight the student’s positive perceptions of engaging in this process: “It made me look in more depth at the theory and the models”; “It helped you think of possible questions that could be asked and therefore helped with planning revision sessions”; “It made the information sink in easier, as I am not very good at revising, this might have helped me for future exams”. It should also be recognised that a minority of students did not believe this process was useful. This is reflected in the following student comment: “I didn't take part because if I had made my own questions, I would have made them easy enough to answer, making it pointless as a revision technique.” The comments made by the above student suggest that they did not understand the purpose or perceived value of taking part. This is perhaps something the course team need to reflect on when delivering the module next time around.

The statistical results demonstrated grades were consistently higher in the students that completed the additional
question task compared to students who did not complete the task, overall module grade [58.50 ± 11.81 vs. 42.40 ± 19.49; p<0.05], exam component only (worth 40% of the final module grade) [69.06±13.71 vs. 45.38±25.15; p<0.05] and overall student profile (the average for the eight different modules studied during the same academic year) [57.17±6.81 vs. 50.65±17.15; p<0.05).

This research has demonstrated that whilst there may be some limitations to using online MCQ's at final year undergraduate level, if the way they are used is planned carefully, they can be effective tools for assessment and learning. The quantitative evidence suggests that through active involvement in the question construction and design stage, students, can become much deeper learners, which can lead to improved academic performance. If this process has in some way provided a mechanism for making students look much more deeply at the module content then it could be considered effective in enhancing student learning. It was particularly interesting to see that those students who had taken part in the exam question task actually performed better in the strategic marketing module than they had in their overall profile average, suggesting the benefit that this particular technique may have provided to the participants academic performance. Perhaps there is a need to explore ways of encouraging more students to take part in the process. This particular method was optional during this study with 54% taking part, but perhaps one method for increasing this level of uptake could be to make the question design element a compulsory part of the assessment. In this context, a grade could be given to the quality and appropriateness of the questions. This is an area where there is clearly scope for further research and discussion, but one which could be valuable for the future.