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APPLICATIONS OF EVS

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How did you use EVS in your teaching?

For seven weeks over a semester, an EVS drop quiz for summative feedback was given in the lecture. This best five quiz results were then used as part of their assessment and worth 10% of the overall module mark. Each quiz had six questions and had a mix of both qualitative and quantitative questions. The information being tested in the quiz was from the previous week's lecture to give students time to absorb the lecture information and prepare. MCQs were created from a bank of questions that had been written by previous students, on the same module, as part of their assignment.

A weekly league table was uploaded to StudyNet to show how students were progressing. The results were shown by student registration number rather than name. Students achieving more than 70% were highlighted in green, from 40% - 70% in amber and below 40% in red. Comments were also attached next to the mark on the league table.

Why did you choose to use EVS in this context?

Students are familiar with the use of multiple choice questions to test their knowledge and find the technology easy to use. From personal experience of using EVS in previous modules, it was clear that students enjoyed using it for formative feedback. EVS also appears to engage all students and not just the good students. It is easy to develop an EVS test using TurningPoint EVS software, as it provides an extra 'tab' in PowerPoint to create multiple choice questions and capture student responses.

What were the benefits of your application of EVS for you and your students?

- To provide academic staff with immediate feedback regarding the misunderstanding of concepts and ideas being communicated
- EVS provides instant formative feedback to students, which may also be directly relevant to summative assessments
- EVS encourages a high level of interaction within lecture sessions
- EVS use prompted increased attendance (average 84%) and participation in lectures
- If student responses showed a misunderstanding, concepts could clarified immediately
- Experience showed that students would put in extra effort even for a small proportion of marks, thereby encouraging a learner centred approach
- It is possible to identify early in the semester which students need help and put in support mechanisms
- Students do not feel threatened or 'stupid' if they do not know the answer, as the responses are anonymous to their peers.
- International students who do not normally participate much in lectures are happy to submit their answers using EVS

Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?
It took several weeks for students to collect their handsets, despite frequent reminders and 9-5 opening of the office. Handsets have to be distributed from this office as the handsets needed to be registered to a student to enable their scores to be used for summative assessment and to ensure return of handsets at the end of Semester B so that they can be used by level 4 students in 2011-12.

The report format provided by TurningPoint is not intuitive. Many different reports are provided and perhaps there is too much choice?

Some student handsets did not appear to work, although it could be the students trying to get round having to do the quiz. If this happened, the students were requested to re-turn the handset and get a new one. The downside of this was that students then had two handset numbers attached to their name and updating the marks for summative feedback took extra time.

If students forgot to bring the handsets, it was not possible to capture their marks.

Future uses of EVS
Attendance monitoring is required for level 4 and 5 students and may be required for postgraduate students in future. EVS could easily capture this information.

EVS could be used to capture student feedback to help module leaders improve their modules in future.
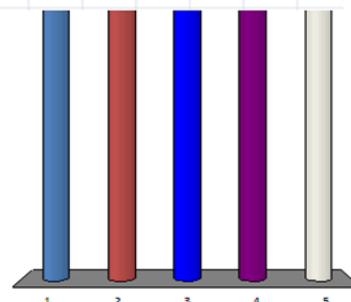
Question 6
The normal cost for this project is £1600. If the critical activities are A, B, C, E and F, how much would the project cost if it was crashed by one day?

Activities	Cost slope	No of possible crash days
A	100	1
B	50	3
C	110	1
D	40	4
E	70	2
F	200	2
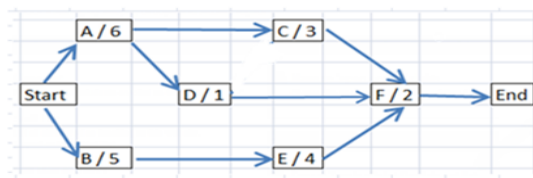
1. £1780
2. £1650
✔3. £1750
4. £90
5. None of the above

Answer Now

How did you use EVS in your teaching?
We have been using EVS across the first year BSc Computer Science undergraduate cohort. Over 300 students have been issued with handsets and they are being used in a variety of ways by different academics.

Why did you choose to use EVS in this context?
Overall, we wanted to encourage greater engagement with learning among our first year students.

What were the benefits of your application of EVS for you and your students?

Amanda Jefferies,
School of Computer Science

Academics have been able to experiment through this semester with new ways of offering feedback and with new styles of assessments especially 'low stakes' and formative ways of asking students for their input. Although it was a new technology to many colleagues, there has been an enthusiasm to trial new ways of providing prompt feedback to students on their understanding

Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?
In some rooms the hardware and software has yet to be installed which has meant taking along the specialist receiver and in some cases an extra laptop with the software already loaded. Colleagues have got round this difficulty by using a handheld receiver with smaller groups. This was already owned by the School, since our Change Academy for Blended Learning Enhancement (CABLE) project experimented with MSc students using EVS.

Jackie Willis,
School of Life Sciences,
Health & Human Sciences

How did you use EVS in your teaching?
EVS was used for teaching mathematics and statistics to biosci-entists, firstly in a diagnostic maths test, followed by workshops.

**Why did you choose to use EVS in this context?**
I was dealing with a large student cohort (about 180 students in one session). It was important to establish that the students were following the explanations and able to process the information correctly. EVS was the only means of checking that all of the students were engaging and had understood the material.

What were the benefits of your application of EVS for you and your students?
During the session students were able to confirm that they had the correct answer to the problem, so feedback was immediate. This provided the opportunity to run through ex-planations again if necessary. For the diagnostic test, I was also able to capture the re-sponses for each individual student using the quiz feature of Turning Point. At the end of the test, the marks were easily downloaded into an Excel spreadsheet and published on Studynet using just the Student ID number. This also meant that I could allocate stu-dents to workshops that met their learning needs, based on how they scored in each section of the test. Without EVS I would have marked the test by scanning OMR sheets which would have taken a few hours of my time instead of just a few minutes.

Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?
No, but I have found that instead of just using multiple choice questions for the answers I can just as easily ask for the numeric answer to be input, adding a new dimension to using EVS.
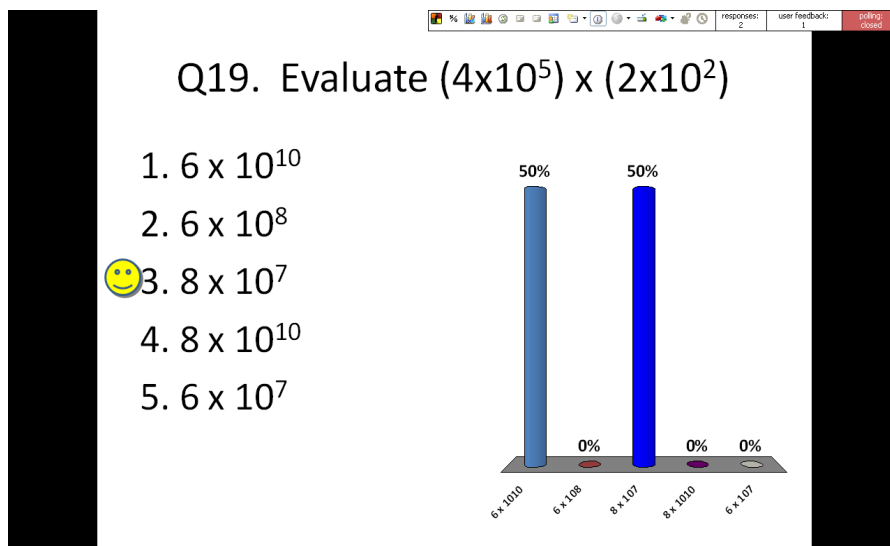
Iain Cross,
School of Life Sciences

How did you use EVS in your teaching?
1. Regular drop-quizzes on materials taught both during the lecture and in previous sessions.
2. As an ice-breaker to a subject and to ascertain existing understanding of new topic material.
3. Answering questions generated by students' peers in small groups
As a practice technique for answering MCQs.

Why did you choose to use EVS in this context?
For each of the above...
1. For improving memory and recall of key facts; to understand how students' knowledge is developing and identify areas for additional teaching or revision support.
2. To overcome stigmas of responding in public to questions and remove fear of giving 'wrong' answer.
3. To encourage students to reason what would be an incorrect answer to a question as well as the right answer; developing a deeper understanding of the material & help indentify differences between potentially similar answers.
Overcoming responding stigma, provides ideal opportunity to explain incorrect answers; students appreciate their own performance to prioritise revision subjects.

**What were the benefits of your application of EVS for you and your students?**
•   Helps me to identify students knowledge to adjust future teaching and requirements for support.
•   Helps students appreciate their own performance
•   Communicates clearly the expected level of knowledge required for success in examinations.
•   Removes barrier of embarrassment, stigma etc when responding in public; improves student engagement with material.
•   Adds an element of 'fun' to lectures – novel technology and often fun and amusement(!) when discussing answers.
•   Breaks up lengthy lectures into shorter segments.

Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?

•   Maintaining student focus when discussing answers – they may become more interested in the range of responses than on understanding why their selection was correct/incorrect.

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- Students who have forgotten EVS handsets may become isolated from sessions.
- Occasional difficulties in receiving votes.
- More advanced uses of EVS (e.g. for summative assessments, attendance monitoring etc.) could be unappealing as further training may be required.
- Time spent initially preparing slides can be significant.
- If not used with care there is a risk of trivialising subjects into simple facts.
- Reliance on an old laptop computer which is underpowered for EVS software.

Click image below for Iain's video on EVS

Using EVS to support undergraduate learning:

A practical experience
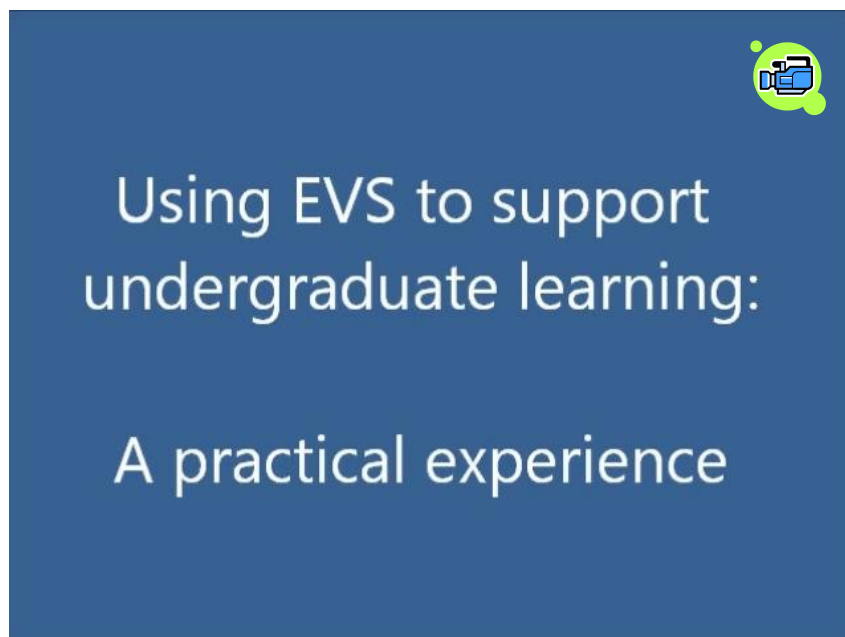
Jenny Lorimer
School of Health & Emergency Professions

How did you use EVS in your teaching?
An electronic voting system (EVS) was used to enable conditional branching at key decision-making points during a series of imaging scenarios, where a conditional branch (in computer programming) is an instruction that directs the computer to another part of the program based on the results of a compare. In practice conditional branching refers to the application of the EVS to allow the student group to control the order of PowerPoint™ slides in a presentation, based on the responses received to posed questions.

Why did you choose to use EVS in this context?
EVS was used to provide immediate, relevant feedback to students in a non-threatening manner while enhancing the student experience in a large cohort that is diverse both in terms of age and ethnicity. A project was used to investigate the feasibility and suitability of embedding conditional branching as an integral teaching tool for a large group throughout an undergraduate module.

What were the benefits of your application of EVS for you and your students?
One of strengths of conditional branching was found to be the ability to link the imaging scenarios closely to clinical practice. Relevant images were included at key decision making points and subsequent explanations were described to the group. Students were able to experience the effect of how an inappropriate decision could have a variety of different adverse outcomes for a patient.

During the teaching, the focus of the conditional branching was as a tool for helping the students to understand topics as a whole and as an opportunity to develop their critical thinking and decision making skills. Prior to each conditional branching session the students had had a number of teaching sessions on a given topic area. It was clear that throughout the teaching the conditional branching was a successful method of increasing student engagement and classroom interactivity, despite the large size of the group. Although students had individual handsets there was continued evidence of student collaboration and social learning as students discussed options with small groups of their peers prior to voting.

Did you experience any drawbacks or problems with using EVS that may prompt you to modify or develop the use outlined above?
The lack of right or wrong answers in the clinical scenarios is initially alien compared to the more common use of EVS and therefore required a level of reassurance. The main challenge was the length of time that the preparation of the scenarios took, a key factor being the need to reduce the complexity of real life cases into a simplified format that could be used and understood more easily as teaching examples. One of the complexi-

ties of the concept was that once students had decided a route by majority decision there was no easy way to go back and review alternative routes. This was overcome by adding summary slides at the end scenario. Whatever decision had been made, and whatever patient pathway had been taken, the students were still exposed to all of the alternatives. In this way, they were able to understand when the group had made an inappropriate choice, the reasons for it being inappropriate, and the slide could be revisited permitting the students to review the question in the light of new knowledge.

Click image below for Jenny's video on EVS