Using electronic voting systems in wound care conferences

There is evidence to suggest that electronic voting systems (EVS) have been successful in facilitating student learning. However, studies that investigate the application of EVS technology in other areas, for example professional conference settings, are limited. Furthermore, little if any research exists that examines the usefulness of EVS in wound care. This article reviews the literature on the use of EVS technology and considers the strengths and weaknesses of implementing EVS in professional wound care conference settings. Recommendations for future use and tips for presentation are also provided.

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Electronic voting systems (EVS) have become increasingly popular in educational settings to aid and promote learning. An EVS consists of a number of hand-held keypads that are distributed to the target audience, all of which communicate with a master control unit. Audience members are instructed to press the keypads to respond to questions asked by a main speaker or tutor. Audience responses can then be analysed and displayed electronically, producing instant feedback regarding the responses to each question asked (Palmer et al, 2005).

The use of EVS in a teaching setting promotes participation and engagement from students, while providing a non-threatening environment to encourage them to interact without feeling intimidated or embarrassed by large group numbers. EVS technology can also enhance traditional lectures by promoting interactivity and initiating group discussion (Draper et al, 2002).

In addition, EVS can be used as an effective method of data collection to establish the knowledge, attitudes and opinions of a target audience (Duggan et al, 2007). A key advantage of using EVS is that they can provide feedback to both the audience and the speaker/tutor on how well the audience understands the concepts being presented (Kay and LeSage, 2009).

Data collection from EVS is also more accurate as the responses are obtained electronically, which eliminates potential human error in transcribing written answers and reduces the risk of losing hard copies of answer forms (Pradhan et al, 2005).

The majority of research surrounding the use of EVS involves student participants in educational settings, for example Elliot (2001) found that using EVS technology had a significant effect on students' performance in lectures, stimulating their interest and concentration and encouraging active learning. Furthermore, Boyle and Nicol (2003) found that the main advantage of using EVS in larger group classes was the quality of feedback (to the speaker/tutor and the audience).

Although EVS technology has been used in other contexts (i.e. for entertainment audiences to answer quiz questions), when it comes to education Masikunis et al (2009) demonstrated that interactive lectures supported by EVS technology can significantly enhance students' learning in comparison with lectures of a more traditional format.

King and Robinson (2009) conducted a case study of students' perceptions of EVS technology in university lectures and whether it could enhance learning and engagement. The majority of students gave very positive feedback about the usefulness of EVS technology in their lectures.

Furthermore, students who felt that they would not normally participate in class discussion indicated that they would be more encouraged to participate in lectures using EVS technology as opposed to traditional lecture formats. However, no correlation was found between the use of EVS technology in lectures and student grades.

However, a study conducted by Cain et al (2009) to determine the impact of EVS technology on student motivation and attention, revealed contrasting results in terms of grade improvements. Comparisons of grades beginning three years before the introduction of EVS technology to physiological chemistry and molecular biology lectures indicated

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that the students who experienced EVS lectures obtained significantly higher grades than students who participated in traditional lectures. It was also found that 99% of students reported the use of an EVS in their lectures helped them maintain attention, and attendance at the lectures improved from 75% to 98% toward the end of the semester (Cain et al, 2009).

Another key advantage of EVS technology is that it can reduce the likelihood of audience members feeling pressured to provide socially desirable answers or answering similarly to other audience members (Cain et al, 2009). This is partly because they are unable to see the answers made by other individuals on EVS keypads, whereas students may feel compromised when asked for a show of hands.

Further research demonstrates the benefits of EVS technology in educational settings across a variety of subjects. In relation to health care, a review by Cain and Robinson (2008) looked specifically at the potential benefits of EVS within health and pharmacy education. The majority of pharmacy students involved felt that EVS technology increased their involvement with and understanding of lectures.

The conclusions of this review made some important recommendations for future research, for example instead of the strong focus on the effects of EVS technology on student perceptions and grades, research is lacking in the area of question design and instructional methods.

Similarly, Torbeck (2007) used EVS as part of an evaluation to obtain feedback from an audience of surgical employees who had completed an educational residency. Obtaining feedback from participants using EVS was more efficient compared with paper-based formats and evaluation feedback was easier to provide as well as being anonymous. These findings suggest that EVS technology can be particularly beneficial as an evaluation tool as well as for learning.

Although there is considerable evidence of the positive benefits of EVS in educational settings, there is limited research in other areas, for example professional conference settings and little, if any, comment on the wound care field. It is suggested therefore, that EVS technology could be used to deliver interactive presentations at wound care conferences to an audience predominantly made up of healthcare professionals.

Proposed uses

EVS has been promoted for its ability to provide immediate feedback, focus student attention, identify gaps in knowledge, and enhance student involvement in lectures (Collins et al, 2007). It would seem, therefore, that EVS technology has the potential to make conference presentations more engaging and interactive (Cain and Robinson, 2008). This technology could be particularly useful at wound care conferences, where it could be brought in to engage audiences with new research, case studies, new products and tips for clinical practice.

In order to encourage audiences to participate in interactive presentations, different types of questions should be incorporated throughout. Interactive sessions should comprise both summative assessment, which includes questions that allow presenters to judge whether the audience have grasped particular concepts, and formative assessment, which allows presenters to adjust their instruction according to the audiences' responses (Penuel et al, 2009).

For example, as part of an interactive presentation on wound care, a summative assessment could include questions to assess the audience's understanding of the presentation content, whereas a formative assessment could include questions to establish the audience's existing knowledge of the subject and to ask the audience to draw upon their experiences in clinical practice. The EVS technology can also be used as an effective evaluation tool to obtain feedback from the audience about their opinions of the interactive session (*Table 1*).

One of the key advantages of EVS technology identified in the literature is the ability to produce and display immediate feedback, so that the audience can see the distribution of responses to each question. At a wound care conference this could be particularly beneficial in allowing healthcare professionals to see how others respond to questions about current clinical practice, for example 'Which method do you most frequently use to measure pain?' or 'Which wound treatment do you think is most stressful for patients?'

The presenter could use data from such questions to adjust the presentation according to audience responses and highlight the importance of certain aspects of wound care. Similarly, in presentations that introduce new products and techniques for practice, questions could be designed to gather the audience's opinions of existing products and practice techniques, as this would provide a comparison with other products and techniques.

Limitations

Although there are numerous benefits of using EVS technology in conference settings, there are some drawbacks. For example, conference presentations are often short, particularly if they are part of a symposium and the presenter would need to ensure that there was sufficient time to allow the audience to understand how to use the electronic keypads, to read or listen to each question, to make their answer selections, and then to view the feedback from each question before moving on with the presentation.

It is also important to ensure that presenters themselves have received training on how to use EVS technology. This will ensure that they are comfortable with the system before delivering an interactive session. Other limitations of EVS technology include the potential for technical problems to occur, or if the proposed conference location cannot support the technology (*Table 2*).

Conclusion

EVS technology could be implemented in wound care conference settings to enhance the delivery of presentations. This technology could also be used to formalise the evaluation process

Table 1
Questions types and example questions

Question type	Example questions
To establish the audience's existing knowledge	The correct selection of wound dressings can minimise pain at dressing change a. yes b. no
To assess the audience's understanding of the presentation content	In your view, does stress slow down wound healing? a. yes b. no
To ask about the audience's experiences and opinions of current clinical practice	What proportion of your patients show signs of pain during their wound treatment? a. 0–24% b. 25–49% c. 50–74% d. 75–100%
To obtain audience feedback on the interactive session	Did you find the presenter's instructions easy to follow? a. yes b. no

Table 2
Tips for presentation design (adapted from Robertson, 2009)

- Keep questions short to allow the audience to read and respond quickly
- Do not include too many answer options
- Avoid overly complex questions
- Where possible, maintain flexibility in the presentation to respond to audience feedback
- Do not use too many questions
- Allow plenty of time to set up and test EVS before the interactive session begins
- Rehearse the presentation to become familiar and comfortable with using the EVS
- Provide clear instructions for the audience
- Ensure that there is enough time for questions/discussion from the audience

of interactive presentations. It could be particularly useful for wound care clinicians, as the benefits of new research areas, products and clinical techniques can be demonstrated and tested within interactive sessions, allowing participants to express their choices freely without peer pressure. WUK

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