Using Quick Response Codes to Facilitate Self-Directed Learning in a Nursing Skills Laboratory

Two-dimensional barcodes, called quick response (QR) codes, facilitate student autonomy in the nursing skills laboratory. Rather than wait for the teacher to demonstrate a specific skills component, students can activate a QR code, which is embedded in a laminated nursing skills rubrics card, via smartphone or tablet to watch a video skills clip at their point of need and as often as needed. This use of technology puts learning tasks within the learners’ control and decreases the downtime of students having to wait, their turn for a demonstration or hands-on practice.

Assisting nursing students in self-directed learning is a major goal of the nursing skills laboratory. Through repetitive practice, students have the opportunity to gain expertise in motor skills, providing the ability to integrate them in clinical practice in the future (Oermann et al., 2011). However, some students often need repeat demonstrations of a skills component, whereas others may not. This produces downtime when students observe others because they do not have the confidence for active (hands-on) practicing. In addition, downtime may result due to students who are actively practicing but who need to stop to have a question answered or a point clarified. Knowing that self-directed learning takes place when the learning tasks are largely within the learners’ control (Kaufman, 2003), the current authors’ objective was to find a teaching method that would engage students with autonomy in applying technology to already existing nursing skills rubrics.

Activity Description

The purpose of this activity was to provide students with the opportunity to view any step or portion of a video clip that demonstrates a nursing skill when needed and as often as needed. To prepare for this activity, faculty created short (15 seconds to 1 minute) video clips showing step-by-step procedures of nursing skills, such as wound care, medication injection, medication administration, and Foley catheter insertion. Through the use of a free, online service (the authors used Google™ URL shortener at http://goo.gl), each video clip was embedded into two-dimensional barcodes, or QR codes, which can hold more information than the familiar one-dimensional linear barcodes on packages. Next, the QR codes were added to laminated nursing skills rubric cards, which were placed at strategic nursing skills points. For example, on a rubric card for the insertion of a Foley catheter, QR codes would be placed at multiple steps, such as “Position patient appropriately,” “Open catheterization tray using sterile technique,” and “Clean urinary meatus.” Students can activate the QR codes of their choice with their smartphones or tablets and proceed to hands-on practice.

Student Evaluations

To evaluate the activity, students were asked whether they found the use of QR codes to be helpful. As expected, the response was overwhelmingly positive, especially appealing to the Millennial generation who are increasingly competent and self-sufficient with technology (Emerson, 2007). Students stated that using QR codes was “very helpful,” “wished there were more,” and “excellent source for learning hands-on topics.” One student used the QR code to view subcutaneous injection while in the hospital as a support prior to performing the skill on a patient. Several students expressed interest in having more lengthy videos and videos relating to additional skills topics. The few students who did not have a smartphone or who did not know how to use one paired with and took turns with students who did.

Conclusion

An intended outcome of this activity was that students would be more independent when they came to the practice laboratory by enabling their use of QR codes to watch videos at the nursing skills point of need. This also decreased downtime, as students were no longer waiting for instructors to demonstrate a specific step of a nursing skill. The authors recommend the use of this technology to assist students in acquiring the skills that will bridge theory and practice in the clinical setting and allow for skills integration in their future clinical practice.

References


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