

Exploring the Effectiveness of an Interactive, Technology Enabled Learning Tool to Enhance Knowledge in Neonatal Biology for Children's nurses

University of Hertfordshire



Julia Petty, School of Health and Social Work, University of Hertfordshire.

Introduction: The role of educational technology to teach knowledge in a specific area of children's nurse education curricula is the focus of this poster. The study aim was to explore whether an interactive, technology enabled learning tool has a benefit for education in relation to enhancement of knowledge and user satisfaction in neonatal specific biology for children's nurses.

Background: Nurses working within the neonatal specialty require a wide range of essential knowledge to support their practice (Petty, 2013). Understanding the biology that underpins neonatal care is paramount and is a topic that novice nurses to the speciality often find complex and challenging. Due to the limited classroom time available to cover the whole spectrum of biology and related practice, nurse educators are faced with the challenge of how to integrate this subject into curricula for the neonatal speciality. The potential benefits of technology enabled learning for neonatal education have not been explored within the increasingly widespread body of literature relating to computer assisted education within nursing (DiGiacinto, 2007; Towersey and Signal, 2008; Schneiderman & Corbridge; Bloomfield et al, 2010; Petty, 2013).

Design & methods.

A mixed methodology design was used with a convenience sample of 31 nurse students, comprising primarily a quantitative evaluation using:

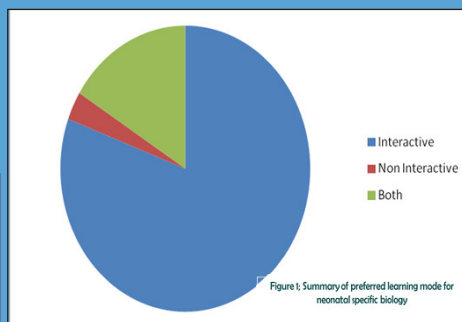
- a pretest posttest survey design to measure knowledge of neonatal nursing students relating to the essentials of neonatal biology; &
- a satisfaction survey to evaluate student preference for interactive versus noninteractive modes of learning which allowed some free text responses to provide qualitative data relating to student experience of the learning mode.

References

- Bloomfield J, Roberts J & While A. (2010). The effect of computer assisted learning versus conventional teaching methods on the acquisition and retention of hand washing theory and skills in pre-registration nursing students: A randomised controlled trial. *Int J Nurs St*: 47: 287-294.
- DiGiacinto D. (2007). Using multimedia effectively in the teaching learning process. *J All Health* 36 (176-179): 0090-7421.
- Petty, J. (2013). Interactive, technology-enhanced self-regulated learning tools in healthcare education: A literature review. *Nurse Education Today*; 33, 1, 53-59.
- Petty, J. (2014). Exploring the Effectiveness of an Interactive, Technology Enabled Learning Tool to Enhance Student Knowledge in Neonatal Biology. *Journal of Paediatric, Neonatal and Child Health* 17, 1, 2-10.
- Schneiderman J & Corbridge S. (2009). Demonstrating the Effectiveness of an Online, Computer based Learning Module for Arterial Blood Gas Analysis. *Clin Nurs Spec*. 23 (3): 151-155.
- Towersey NCM & Signal NEJ. (2008). Neuro Skills Online: the development of a multimedia resource to enhance student learning. *NZ J Psychol* 36 (2): 93-93.

Results:

Both interactive and non-interactive methods of learning achieved significantly improved scores ($p < 0.001$) when measured post test. However, there was no significant difference between the increase in knowledge scores when comparing both modes of learning ($p < 0.103$). User satisfaction analysis however, revealed that the majority of participants preferred interactive, technology-enabled learning in neonatal biology compared to the text-based format due to the use of varied multimedia, active participation, user engagement and flexibility. In addition, a combination of approaches was also found to be of value for learning (Figure 1) which is in line with the principle of blended learning.



Implications for practice.

- ❖ Technology-enabled, interactive self-testing was regarded as an enjoyable and stimulating method to learn about neonatal biology in a self-directed way that could be blended with direct, classroom based teaching.
- ❖ Development of interactive, open access, online resources can be used to disseminate and share essential knowledge for practice to children's and neonatal nurses working in speciality.
- ❖ Nurse educators must look to new and different ways to impart essential knowledge to use alongside traditional teaching modes in a blended way. The role of technology can play a part in this.

