2011

A spiral curriculum for teaching resuscitation: the what, the why, the how

K Rhodes
University of Wollongong, krhodes@uow.edu.au

E M. Ashcroft
University of Wollongong, elfriede@uow.edu.au

Publication Details
A spiral curriculum for teaching resuscitation: the what, the why, the how

Abstract
Background: More than fifty years ago, Jerome Bruner introduced the spiral curriculum based on constructivist ideas. Most fields of education adopted this concept which promises to enable the learner to develop their ability to transfer thinking processes from one context to another - also an essential skill for a medical doctor. Aim: By implementing the spiral curriculum model throughout our course, we aim to not only accelerate our students' learning, we also seek to better prepare them to master situations that arise infrequently or urgently, such as the need for life support skills. Method: Based on the our MBBS entry requirement "Possession of a First Aid Certificate ", our clinical skills teaching revisits "Basic Life Support (BLS)" on several occasions throughout the four year degree, building cumulatively on already learnt content. We guide the students to acquire new psychomotor skills at the same time as applying already learnt concepts and facilitating their ongoing learning through inquiry. Equipped with these skills students participate then in our graded submersive, high-fidelity manikin-based simulation program with a focus on BLS and Advanced Life Support (ALS) scenarios. Results: Evaluation comments such as; "CPR is vital for medical training", "Great revision of BLS, Automated External Defibrillation (AED) and bagging" or "An excellent activity, reinforced lots of physiology and pharmacology while also refreshing BLS/ALS" demonstrate the acceptance of the spiral teaching approach by the students and validates the effort and dedication of our staff.

Keywords
curriculum, spiral, teaching, why, resuscitation

Disciplines
Medicine and Health Sciences

Publication Details

This conference paper is available at Research Online: http://ro.uow.edu.au/medpapers/272
A SPIRAL CURRICULUM FOR TEACHING RESUSCITATION: THE WHAT - THE WHY - THE HOW

K J Rhodes & E M Ashcroft
Graduate School of Medicine, University of Wollongong, Wollongong
WHAT?

- Advanced airway management
- Intravenous cannulation & arterial blood gases
- Communication & teamworking skills
- ECG recording and interpretation
- Resuscitation equipment & parenteral drug administration
Because the ability to transfer thinking processes from one context to another is cultivated in education that follows Spiral Curriculum concepts based on constructivist learning ideas.

WHY Spiral Learning?
- has sound theoretical underpinnings
- is a robust curriculum framework
Key features:
• topics are revisited
• levels of difficulty increase
• new learning is related to previous learning (Davis et al, 2003, Dowding, 1993, Harden, 1999)

WHY the need for Competence?
Australian Medical Association requires doctors “to prioritise and synthesise information, integrate knowledge and skills and apply these appropriately in the treatment and care of the patients” (AMA, 2010).

WHY Resuscitation Skills?
Research has shown that emergency and basic life support skills of junior doctors are low, lack confidence and do not meet practice guidelines (Premadasa et al. 2008, Remes et al. 2003, Tan et al. 2006)

WHY the need for Competence?
Royal Australian College of Surgeons key performance indicators for clinical decision making call for doctors to “manage complexity, uncertainty [and to] effectively manage complications” (RACS, 2010).
Y1-Out-of-Hospital arrest with BLS
Pocket mask / 02 / AED
Scenarios: At the beach / At the airport / Shopping in Canberra / Babysitting / At the bowling club / Some DIY / At the neighbours

Y2-Arrest in acute setting with BLS
Guedel's airway / noso-pharyngeal airway / Larygeal mask / manual resuscitator bag / 02 / AED
Scenario: Mr Smith found unresponsive in hospital room

Y2-Skill acquisition for ALS
Resuscitation trolley / Mini-jets / manual defibrillator / Intubation equipment preparation / airway adjuncts / suction / 02

Y3-Acute presentations with ALS
Immersive simulation scenarios: Acute head injury & seizure / AMI with pulmonary oedema / Ruptured ectopic pregnancy in hypovolaemic shock

Y2-BLS & ALS as primary task
Immersive simulation scenarios: Collapsed person found in foyer / Asystolie 2 days post MI /AF caused by hypoxia in acute pneumonia

HOW?
Chance to revise and re-familiarise self with responding to a BLS scenario, [and learning about] airway equipment. (Y2 student: BLS & airway)
Both IV cannulation and ALS were very good, very important to practice these skills before doing the real thing. (Y2 student: cannulation & IV).
I [...] enjoy / benefit from doing this activity in isolation [...] then incorporating into scenario based learning. (Y2 student: cannulation & IV).
It was useful to prepare for this clinical skills session and I think it will be useful to refer back to [it] during our studies. (Y2 student: ECG).
This session was extremely useful and educational, more simulated situations to practice my emergency management would be highly beneficial. (Y2 student: simulation).
I think this would beneficial to do more often. I am sure I would become more confident in ALS. (Y2 student: simulation).
An excellent activity, reinforced lots of physiology and pharmacology whilst also refreshing BLS / ALS. (Y3 student: simulation).
Fantastic learning experience, a great opportunity to put some of our theoretical knowledge into practice. (Y3 student: simulation).
Awesome, this is a great activity and I feel this practice is essential. (Y3 student: simulation).