Peer assessed medicines management OSCE for student nurses- a strategy to enhance safe medicines management practice

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Overview

- Background to medicines management safety-
- The evidence
- Conceptualisation of medicines management learning – theory and practice
- Mixed methods study
- Reliability of peer assessed proforma- criterion & global scores
- How students construct their assessments of peers performance
- Implications for practice, research and education

What the literature shows about students experiences of medicines management in practice?

- Variable levels of supervision in practice
- Students and mentors perceptions they lack pharmacology knowledge
- Medicines management lacks integration into the curriculum
- Students want more time for medicines management learning in practice
- Students feel vulnerable when undertaking medicines management

No national assessment proforma / method

- Medicines management OSCEs use task based approaches to assessment

So what about numeracy assessment?

- Pass mark boundaries vary nationally and internationally
- Assessments do not continue throughout training internationally
- Computerised interactive learning helps student learning
- Largely separate from other aspects of medicines management

Theoretical and practical aspects of medicines management

Taught theoretical input

- Bioscience
- Law & ethics
- Policy and guidelines
- Pharmacokinetics & pharmacodynamics
- Drug groups in health & disease
- Documentation
- Numeracy

Practical skills

- Simulated clinical learning experiences
- Simulated medicines administration
- Learning in practice
- Mentor support

A conceptual map of the factors affecting safe medicines management for student nurses

Deficiencies in educational preparation in practice at HEI
- non integrated approach to medicines management education

Mentor's deficiencies in medicines management knowledge and skills

Deficiencies in mentor's numeracy skills

Non adherence to policy by student

Student nurses

Poor role modelling by mentor

Deficiency in student's numeracy skills

Mentor workload

Deficiencies in knowledge contextualisation

Mentor failing to fail students who are not proficient in medicines management

Lack of time to supervise students undertaking medicines management

Peer assessed Medicines Management OSCEs (PAMMO)

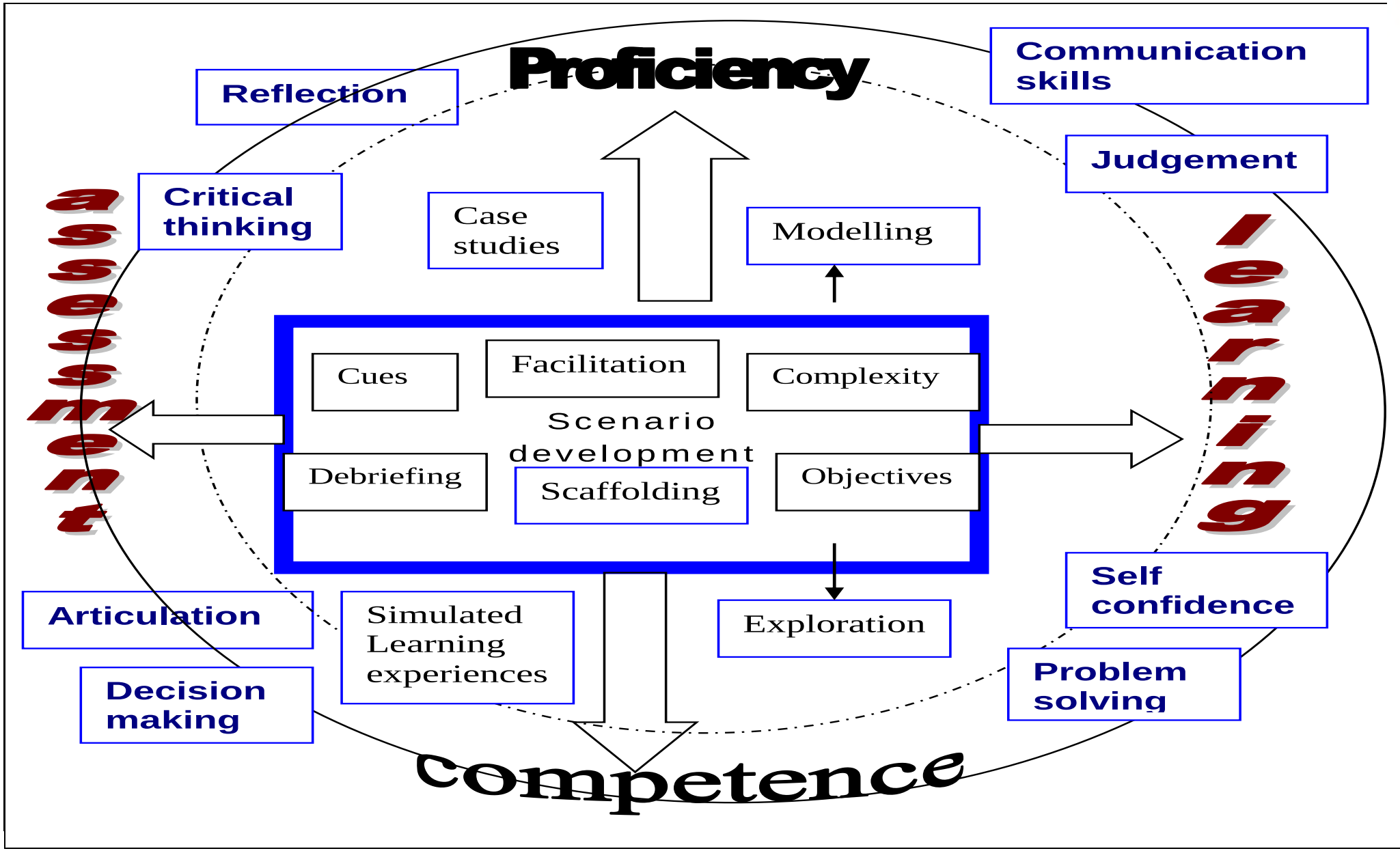
Why

- Simulation advocated internationally and nationally
- Variability in role modelling in practice
- Integrated approach to medicines management learning and assessment
- Summative OSCEs resource intensive
- Peer assessment helps students socially construct their learning and assessment

How

- Design a peer assessed medicines management OSCE
- Filmed students undertaking PAMMO
- Peer students observe video vignettes & assess peers

Holistic model of skills acquisition



Explanatory sequential design

The basic procedures for implementing an explanatory sequential mixed methods design (adapted from Creswell & Plano-Clark, 2011: 84)

Step 1

Design and implement the quantitative strand

- Identify research question
- Determine the quantitative approach- Descriptive using peer assessed medicines management OSCE proforma & simulation effectiveness tool
- Identify the quantitative sample- pre registration nursing students
- Collect data
- Analyse data using descriptive and inferential statistics

Step 2

Design and implement qualitative strand

- Identify research questions
- Determine qualitative approach- Focus group interviews
- Purposefully select a qualitative sample that will help to explain the quantitative results
- Collect the focus group data using an interview guide developed from the quantitative results
- Transcribe and analyse the data using theme development to answer the mixed methods questions

Step 3

Interpret and connect the results

- Summarise and interpret the quantitative results
- Summarise and interpret the qualitative results
- Discuss the extent and ways that the qualitative results help explain the quantitative

PAMMO design

Development

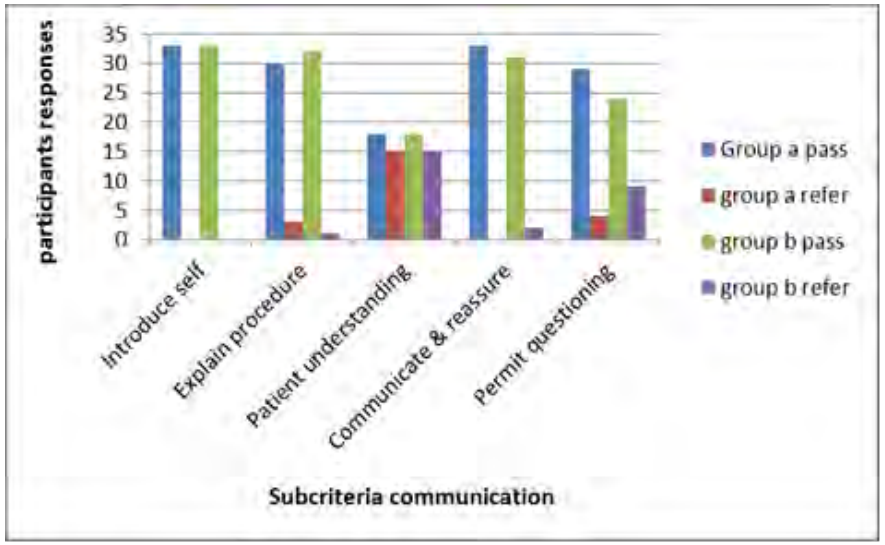
- Blue printing
- Team of experts (Nurse Educators & Practitioners)

Based upon

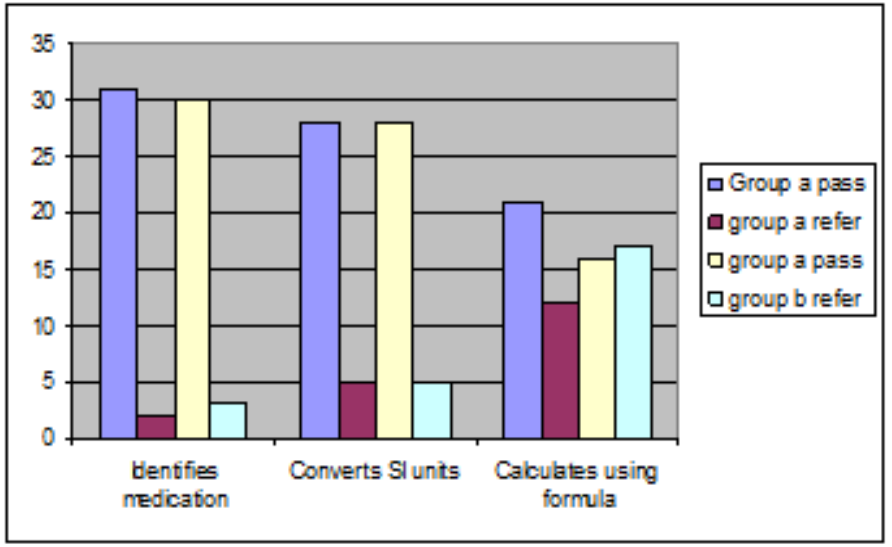
- NMC standards for medicines management (2007 & 2009)
- Local organisational policy
- Best practice guidance
- Tested in simulation

Results

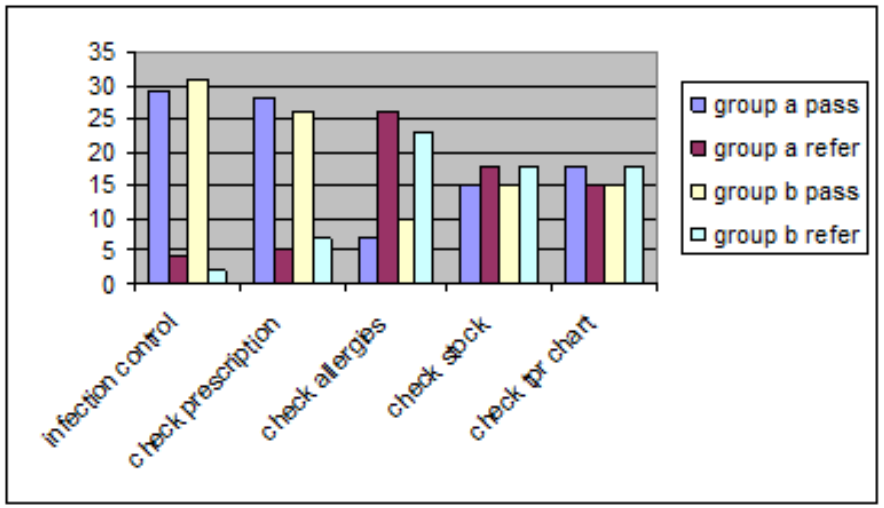
- Communication



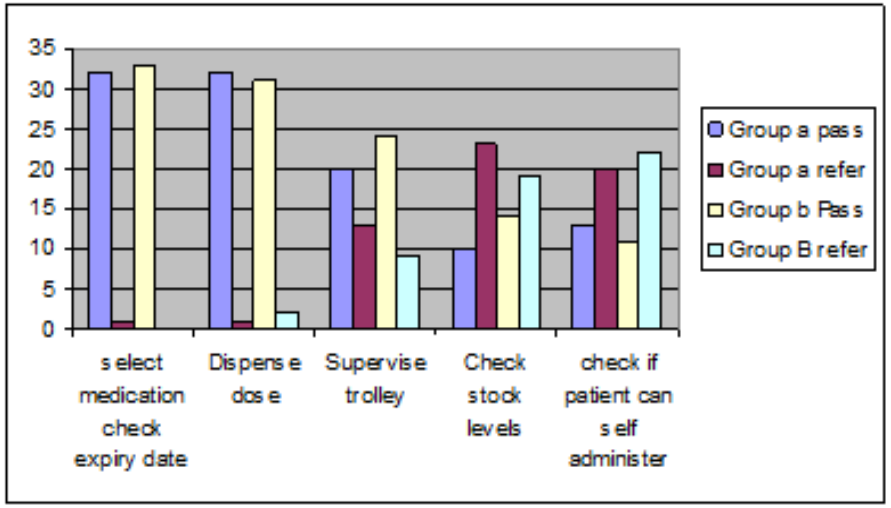
- Medicines calculations



- Preparation for MM

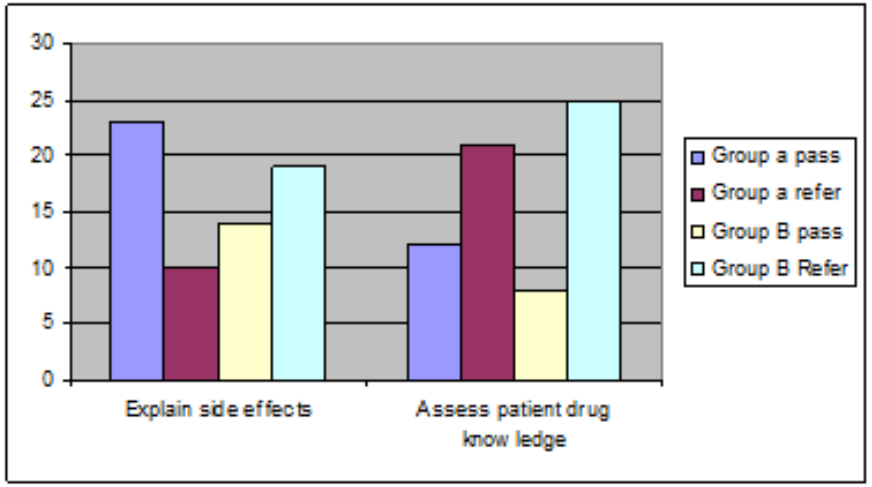


- Dispenses medication

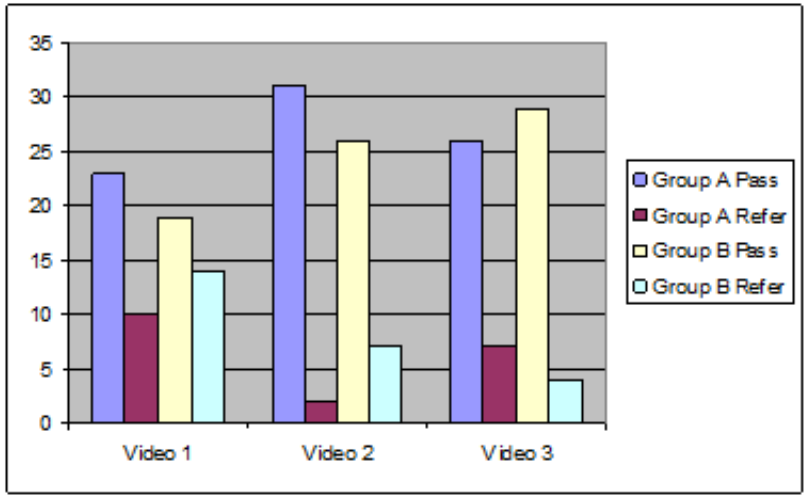


PAMMO Results contd.

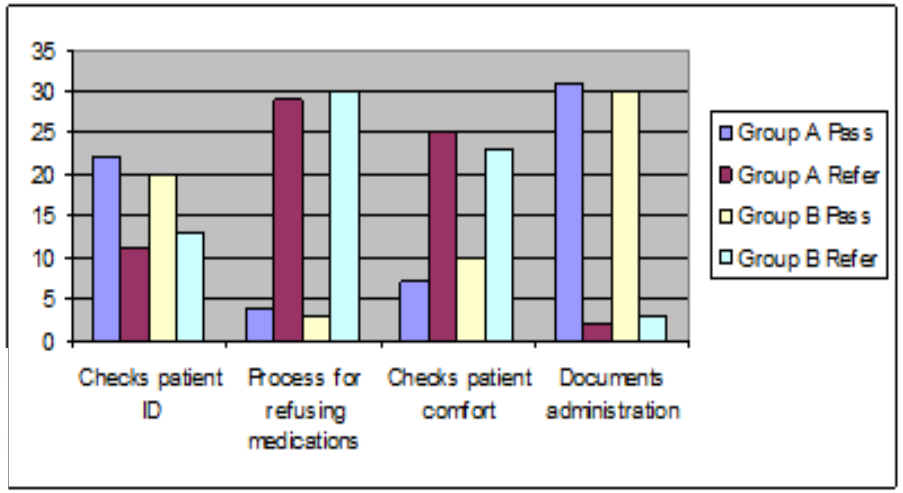
- Drug knowledge



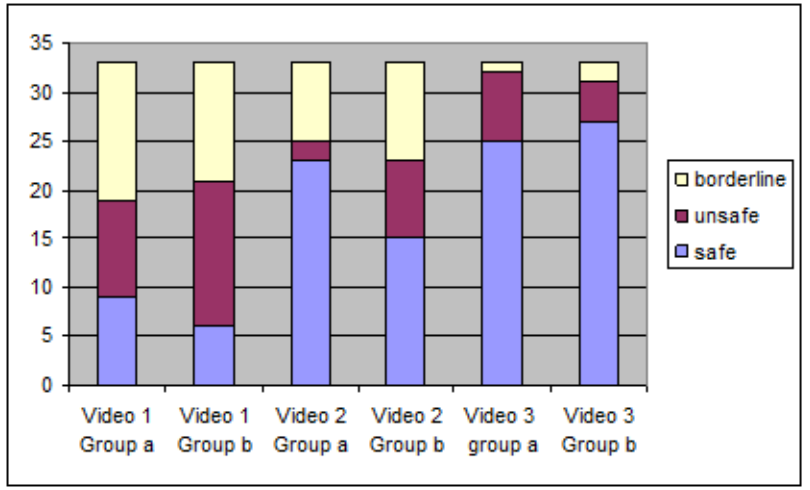
- Pass/ refer scores



- Administration of medication



- Global scores



Judgement making and PAMMO

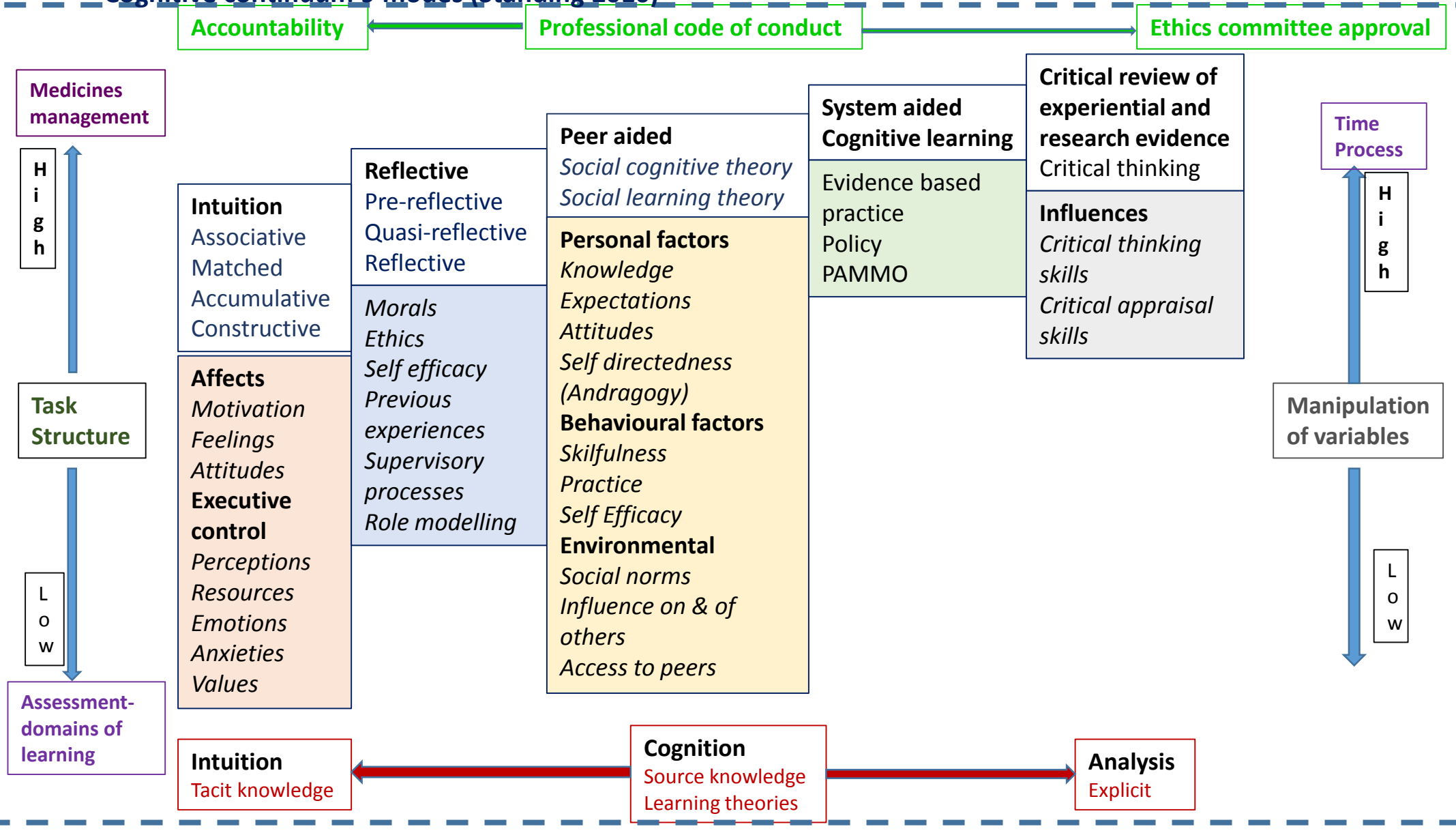
Students based their judgements of safe practice on

- Normative and prescriptive theories of decision making-
- PAMMO assessment criteria
- The standards and policies supporting safe MM practice
- Descriptive decision making-
- Their own experience of MM in practice
- The participants experiences of MM OSCEs in a simulated practice learning environment
- The emotions associated with MM and assessing others

Barriers to escalating concerns –Patient Safety strategy 2014/15 (UK) says & study participants

Social constructivism

Cognitive continuum 9 modes (Standing 2010)



Taking the work forward

- Larger interdisciplinary study in pre-registration healthcare
- Explore the judgement and decision making processes used by mentors to assess students safe MM practice
- Support for MM competence / proficiency in practice
- Use in training registrants
- Can be adapted for other disciplines

Acknowledgements

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Further reading

Arnold J, Johnson L, Tucker S, Malec J , Henrickson S & Dunn W (2009) Evaluation tools in simulation learning performance self efficacy in emergency response *Clinical simulation in nursing 5 (1): e35-e43*

Berkenstadt H, Ziv A Gafni N & Sidi A (2006) Incorporating simulation based objective structured clinical examination into the Israeli national board examination in anaesthesiology *Anaesthesiology Analg. 102: 853-858*

Carlton G, Blegen MA (2007) Medication-related errors: a literature review of incidence and antecedents. A*nnual Review of Nursing Research 24:19-38.*

Dannefer EF, Henson LC, Bierer SB, Grady-Weliky TA, Meldrum S, Nofziger AC, Barclay C, Epstein RM (2005) Peer assessment of professional competence M*edical education, 39 (7):713-22*

Dolan G (2003) Assessing student competency: will we ever get it right? *Journal of Clinical Nursing 12: 132-141*

Doyle , Lennox L, Bell D. (2013) A systematic review of evidence on the links between patient experience and clinical safety and effectiveness *BMJ Open. 3, 1, e001570*

Evans A, Leeson R & Petrie A (2007) Reliability of peer and self assessment scores compared with trainers scores following third molar surgery *Medical education 41:866-872*

Greener R (2014) Understanding adverse drug reactions- an overview *Nurse prescribing 12, 4, 189-195*

Larsen T, Jeppe-Jensen D (2008) The introduction and perception of an OSCE with an element of self and peer assessment *European Journal of Dental Education 12: 2-7*

Lewis T (2004) Using NO TEARS tool for medication review *BMJ 329, 7463, 434*

Miller G (1990) The assessment of clinical skills/ competence of performance *Academic medicine 65: 563-567*

National Institute for health & Care Excellence [NICE] (2015) *Medicines optimisation: The safe and effective use of medicines to enable the best possible outcomes Guideline number* 5 London: NICE

Reason J. (2000) Human Error Models and management *British Medical Journal 320(7237): 768–770*.