



University of Essex

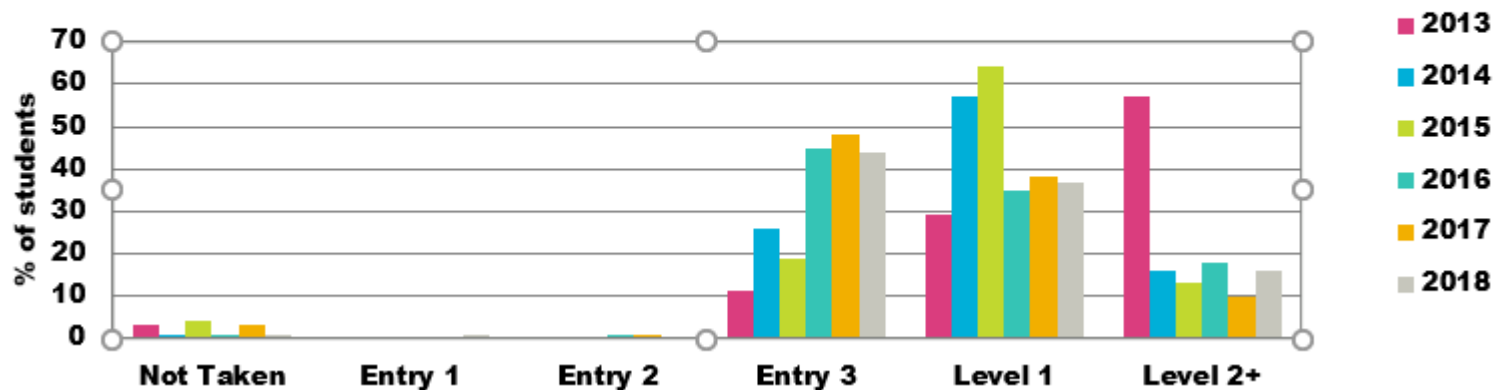
FROM ANXIETY TO ACHIEVEMENT

Using blended learning to develop
mathematical resilience in nursing students

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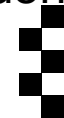
DEFINING THE PROBLEM

Maths Levels on Entry to BSc Nursing Programmes



We cannot assume that previously attained L2 qualifications equate to L2 knowledge and skills on entry (DBIS, 2012; OECD, 2013, 2016; CIPD, 2017; National Numeracy, 2017; Skills for Health, 2017).

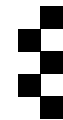
Maths anxiety possibly higher in nursing students than other student populations (McMullan, Jones & Lea, 2012; Wright, 2005; 2008).



EMOTIONALLY SUPPORTIVE LEARNING ENVIRONMENT

“...mathematics, more than any other subject, has the power to crush students’ spirits, and many adults do not move on from mathematics experiences in school if they are negative.”
(Boaler, 2016)

“...it is important to be aware of students’ previous experiences learning mathematics when designing programs to teach nursing students drug calculations” (Røykenes, 2016)

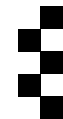


PRACTITIONER RESEARCH

Aim: to evaluate and optimise a blended teaching and learning strategy designed to develop mathematical confidence and competence among pre-registration nursing students.

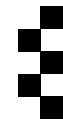
Outcome: Students want:

- 1) An emotionally supportive learning environment
- 2) To use own reasoning/calculation strategies
- 3) SafeMedicate.com assessment format



THE STRATEGIES

- Reflective group discussion
 - ✓ Maths histories (Coben and Atere-Roberts, 2005)
 - ✓ Practice experience (Wright, 2005; 2008)
- Common ‘dropped stitches’ (Tobias, 1978)
- Guided peer learning – puzzles & games (McMullan et al, 2012)
- Fun formative assessment ([Kahoot!](#))
- Structured & guided online learning



SAFEMEDICATE



Name
Vinita Lisa

Age Height
21 years 164 cm

Bodyweight BSA
58 kg 1.64 m²

Allergies
Nil Known

Presenting Complaint
Status Epilepticus

ONCE ONLY MEDICINES			
Date	Medicine (print generic name)		
9/5/2019	Diazepam Solution for Injection		
Dose	20 mg	Route	Slow Intravenous Injection
Dose Calculation	-	Max Dose	20 mg per dose
Indication	Status Epilepticus	Prescriber's Signature	Pharm Date
		Dr. Jones	A.P.

Diazepam Solution for Injection
5mg in 1mL

Drug Monograph

For Use In safeMedicate Only

Drug Name

Diazepam Solution for Injection

Indication

Status Epilepticus

Route

Slow Intravenous Injection

Dose

20 mg once a day

Maximum Dose

20 mg per dose

Dispensed Dose

5mg in 1mL

Special Instructions

Administer over 3 minutes

1mL 

2mL 

3mL 

5mL 

10mL 

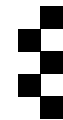
20mL 

50 units 

100 units 

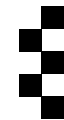
STUDENTS SAID:

“The group activities when we done things in the groups, I found that quite helpful because you had supporting people explaining what they would do and why they were doing it so it made you understand something you didn’t understand before...” (S4: Adult Nursing, Female, age 25 – 34)



STUDENTS SAID:

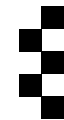
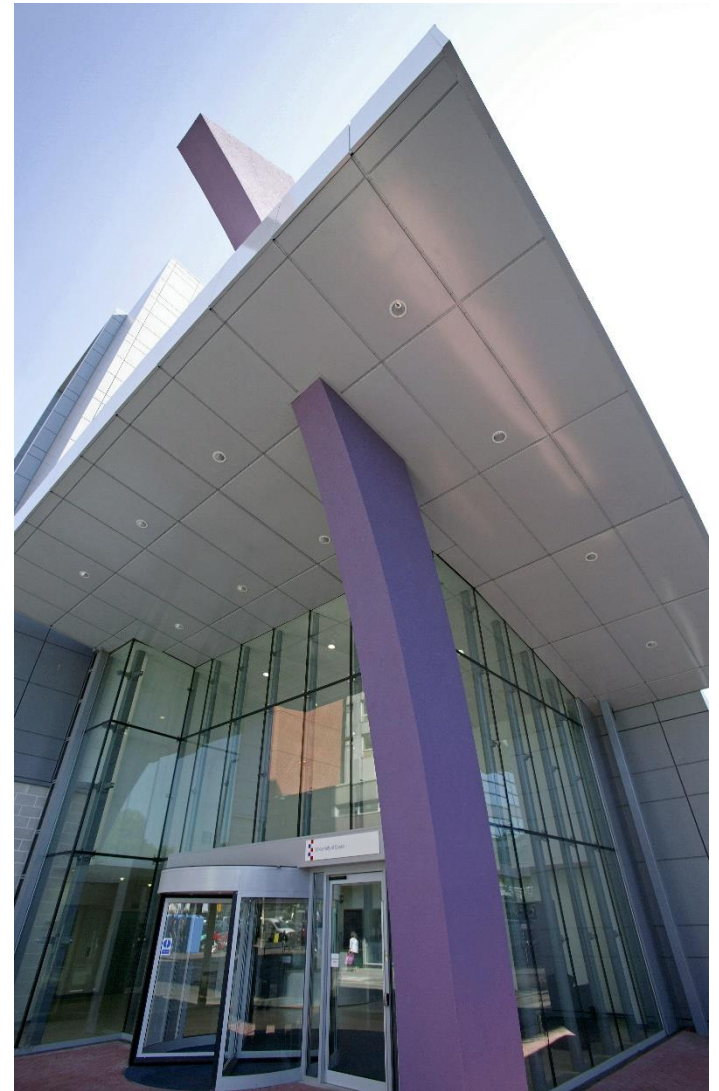
“Well the classroom thing is very good, because obviously everyone is sharing their own experience so you know it’s not just you; everyone’s had a horrible time learning somewhere or another, so yeah, it’s quite encouraging, ‘ok I’m not alone’, it’s quite a safe environment, because obviously everyone is sharing experiences if you get it wrong, everyone’s learning different methods, styles, so it’s quite nice to be in a group of like-minded people.” (S5: Mental Health Nursing, Male, 35 – 44)



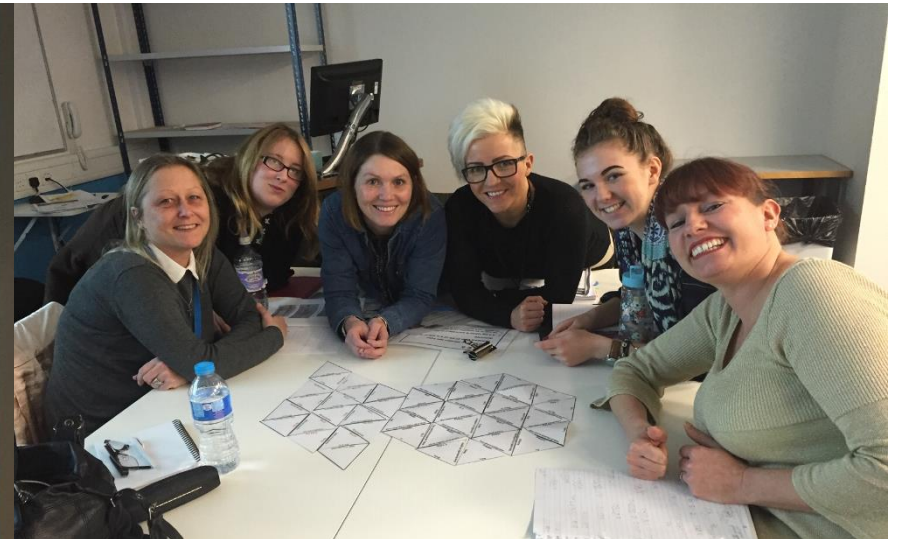
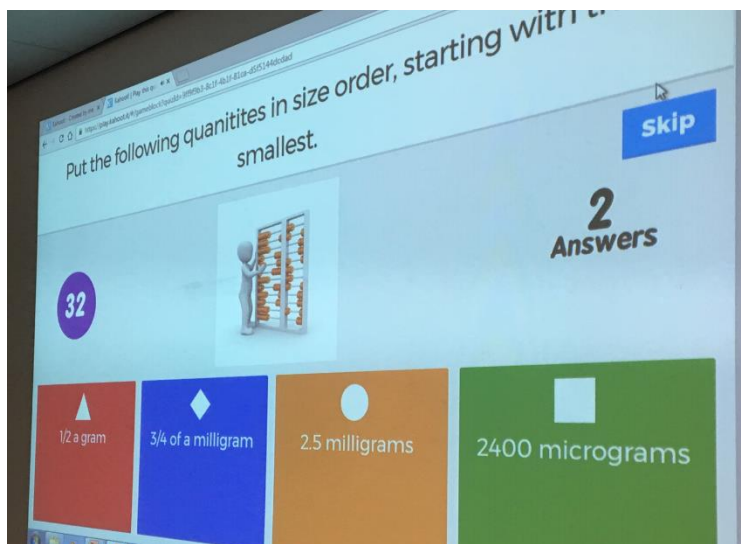


RESULTS

- **100% of Essex students pass their CP calculations assessment (95% at first attempt)**
 - All 6 interviewed maths-anxious students passed first time
 - Excellent module/teacher ratings
 - No-one has cried in my maths lessons since 2014!



FUN & GAMES



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