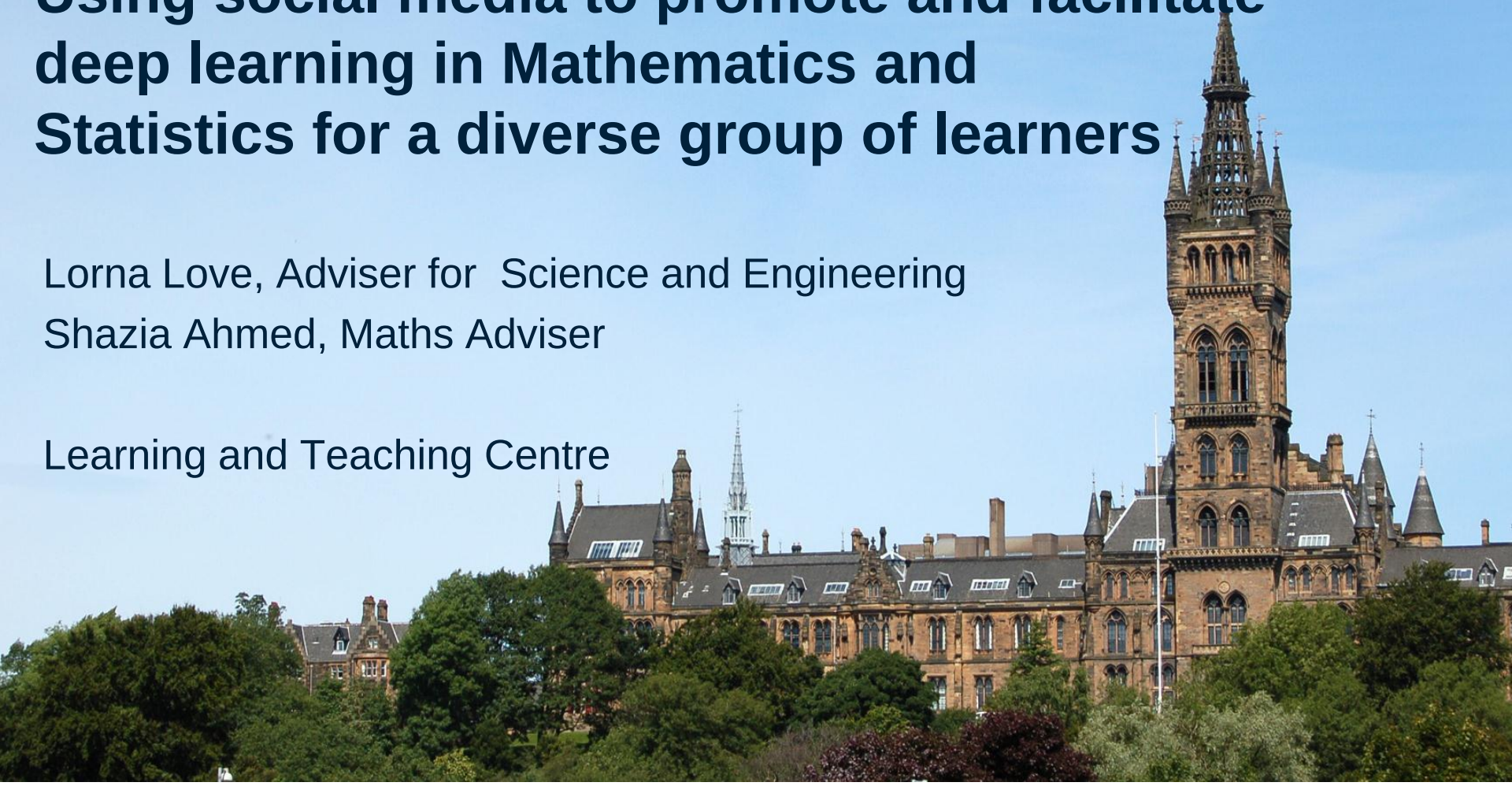
University of Glasgow

Using social media to promote and facilitate deep learning in Mathematics and Statistics for a diverse group of learners

Lorna Love, Adviser for Science and Engineering
Shazia Ahmed, Maths Adviser

Learning and Teaching Centre



University of Glasgow

How we became involved with using social media for student learning

- Retention within the College of Science and Engineering
- Peer Assisted Learning (PAL) for Level 1 Mathematics and Computing Science
- Success story for students attending
- Practical barriers for others
- Convinced of demand for peer interaction but impossible to get students together in the same place at same time?
- Physical PAL may be the ideal but would virtual PAL (VPAL) be better than nothing?

University of Glasgow

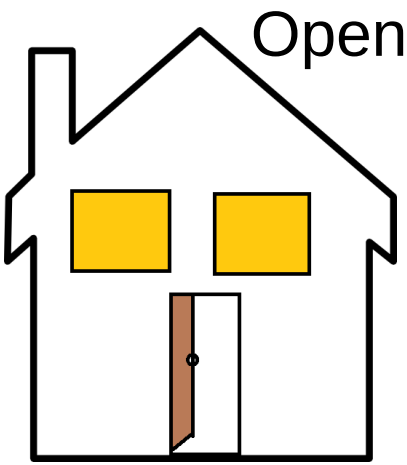
Virtual learning spaces

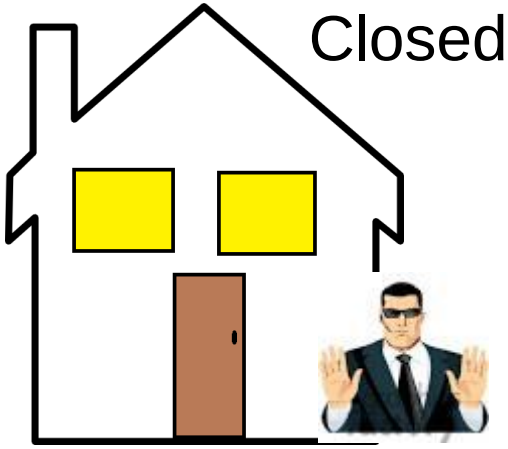
Facebook Page	Facebook Group	Moodle Forum

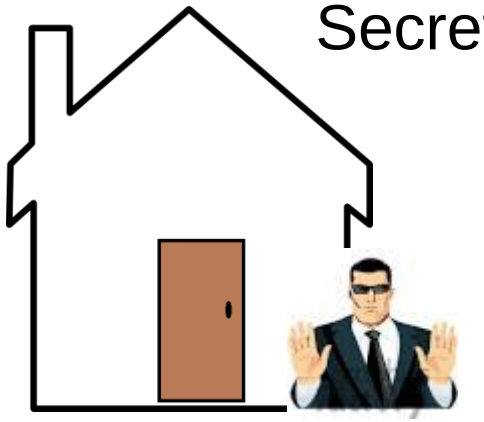
• Public – visible to all whether logged in or not
• Official profile/ presence
• Admin can be shared with others (details not public)
• Fans “like” a page
• Some control of who can post
• “Broadcasts” information
• Easy to use on smart phone/tablet
	• Can be:
	  • Open
	  • Closed
	  • Private
	• Community groups
	• Admin can be shared with others (group members can see who admin are)
	• Members join a group
	• Discussion
	• Easy to use on smart phone/tablet
		• Private – accessible only within institution
		• Admin is staff member
		• Automatically enrolled but students can opt-out from all except ‘News’ forum
		• Only available after beginning of semester
		• Clunky to use on a smart phone, OK on tablet
		• Primarily used for University work

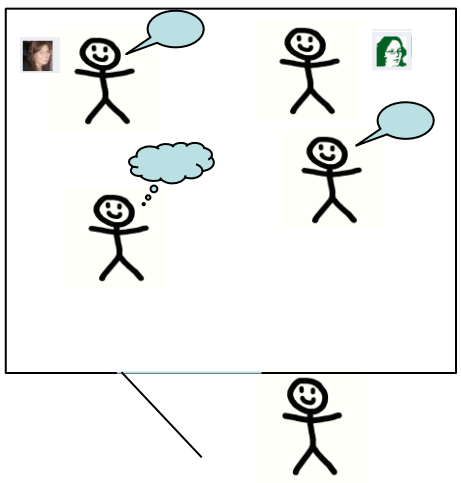
University of Glasgow

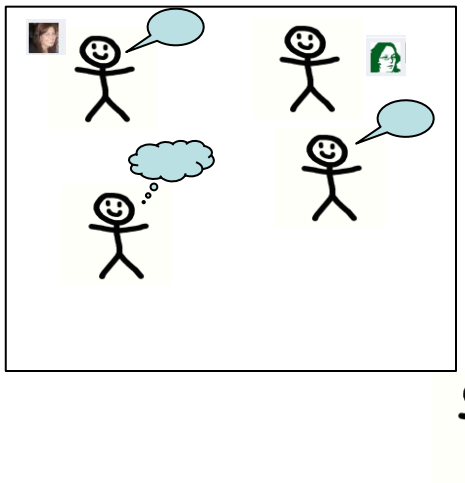
Facebook groups

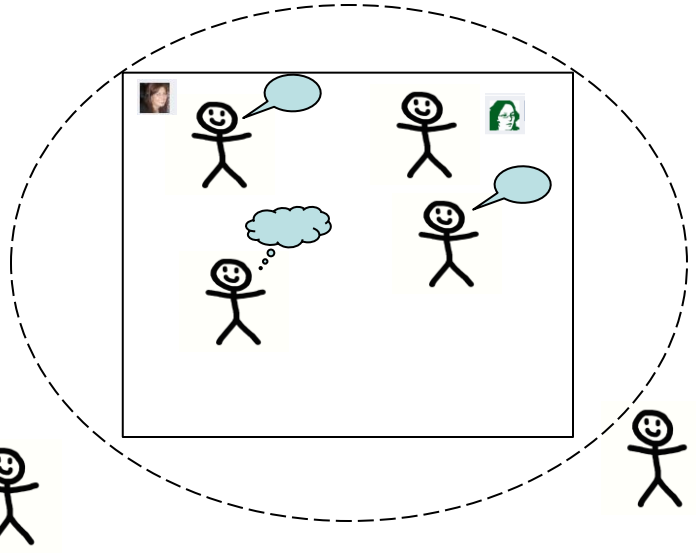












Exceeded our expectations in many ways

Not only VPAL “better than nothing” but in many ways better than traditional PAL…

- Time buffer (space for abstract thinking, worked examples, English language)
- All conversations visible to all in group
- Self selecting conversations
- Level playing field (control online presence; introverted students)
- Urgency of misunderstandings (stepwise subjects)
- Clear articulation forced (vocabulary, precision in writing, practice in writing and asking questions)
- Holiday and re-sit periods

Example 1: Organising a physical meeting

Example 2: Messages of support

Anyone else not pass their skills test first time? :(
Like · Comment · Unfollow post · 11 October at 18:06 near Glasgow

2 people like this.

me....got 11 FFFFFFFUUUUUUU, ive passed the practice ones loads of times which makes it even worse
11 October at 18:08 via mobile · Edited · Like · 1

better than me. I got 9.
11 October at 18:10 · Like

think it really depends on the questions you get tbh
11 October at 18:11 via mobile · Like

are they not all the same?
11 October at 18:14 · Like

Nope, they are random.
11 October at 18:15 · Like

na it gives you random questions so you could get 15 hard ones whereas someone else could get 15 easier ones
11 October at 18:15 via mobile · Like

I got 10 and I don't mind too much. Questions were harder than the practice tests(which I generally pass), it's all about luck.
11 October at 23:11 · Like

Yeah don't fret guys just do a practice one every few days and you'll pass no problem. That's what I did and while I struggled at first I got 14 today . You will all get there no problem!
11 October at 23:27 via mobile · Unlike · 3

Shazia Ahmed Completely agree with
12 October at 08:35 · Like · 1

11..
12 October at 09:08 · Like

Lorna Love Also agree with
12 October at 09:52 · Like · 1

If the questions are random I got all the really hard ones.... It sucked
12 October at 15:18 via mobile · Like

it was logged out by itsself...i didnt have the chance to pass it...whats happening?
12 October at 15:57 · Like

I got 11 as well... hopefully next time!
12 October at 16:30 · Like

Oh my days. I just did horrendously in that practice skills test. :(
Like · Comment · Unfollow post · 22 September at 16:23 near Partick

and 5 others like this.

Me too. I've failed 2. =[
22 September at 16:23 · Like · 2

Beware of the answers which are listed, but just in a 'different form' to what you've calculated :¬)
22 September at 16:24 · Like

I seem to have left any maths ability at home...
22 September at 16:29 · Like · 5

Same.
22 September at 18:14 · Like

It is rather annoying with the "none of the above" answer.
22 September at 18:46 · Like · 1

I remember correctly, "none of the above" is usually the answer for at least 2-3 questions, so if you see that your calculations don't really fit any answers, don't waste your time checking and working through the question again, just choose "none of the above". Don't know about the others, but such approach actually helped me to pass the test last year.
22 September at 19:13 · Like · 1

Thanks
22 September at 19:24 · Like

Ah the skills test is awful, but you get there eventually!
P.S I passed with 13/15 about 9 months ago and after hearing you all talking about it I decided to have another go at the practice one this morning; suffice to say I did not pass! But I did better than I did the very first time round, I've just slowed down a lot!
22 September at 21:50 · Like · 1

Maths is NOT like riding a bike for me!
22 September at 21:51 · Like · 1

I agree it can be annoying, as in the past whenever you struggle on multiple choice you can try and rule out answers and guess from the remaining. BUT, it sure feels good when you get a none of the above question right
23 September at 00:48 · Like

For me I just need to drill the trig identities into my head and work on the graph identifying. If I get those two down properly it should be smooth sailing.
23 September at 01:34 via mobile · Unlike · 1

University of Glasgow

Example 3: Academic Chat

[redacted]

I'm a little (okay, a lot) rusty with trigonometric identities. I'm doing a practice skills test and it's hit me with this bad boy.

Let $f(u) = 2(u^2-u^4)$. Find $f(\sin\theta)$.

So far I've got $2(\sin^2\theta-\sin^4\theta)$ but I don't know where to go from there. A cheeky hint would be appreciated! Thanks.

Like · Comment · Unfollow post · 24 September at 16:06 near Bishopbriggs

Shazia Ahmed Ok, cheeky hint coming up! Take $\sin^2\theta$ out as a common factor
24 September at 16:09 · Like · 2

[redacted] There's a common factor in there
24 September at 16:09 via mobile · Like

[redacted] Now I've got $\sin^2\theta(1+\cos2\theta)$. Stuck again. Is that even correct?
24 September at 16:13 · Like

[redacted] After some more substitution I got

$\frac{1}{2}\sin^2(2\theta)$

which is one of the answers! Hope it's right. I really need to memorise the different ways to express $\cos2\theta$.
24 September at 16:36 · Like

Shazia Ahmed Looking good! I have some formula sheets in my office. Pop round sometime and collect one. They're really good.
24 September at 16:38 · Like

[redacted] There's a good maths formulae appendix in the back of my physics textbook which I've been using, but I'll definitely come and steal yours haha. Thanks.
24 September at 16:39 · Like

Shazia Ahmed The one I have is more portable than the physics textbook
24 September at 16:40 · Like · 2

[redacted] Most things in life are more portable than that bloody textbook...
24 September at 16:41 · Unlike · 7

[redacted] You made a mistake... Check the operator inside the brackets!
24 September at 19:31 · Like

[redacted] The exact result is $\sin^2(2\theta)$
24 September at 19:33 · Like

[redacted] Actually, the answer I got was correct. It appears that you've made the mistake. ;]
24 September at 19:34 · Like · 2

[redacted] We've got $2(\sin^2(\theta) - \sin^4(\theta))$. Factor out $\sin^2(\theta)$ and we've got $2\sin^2(\theta)(1-\sin^2(\theta))$ then we know that $1-\sin^2(\theta) = \cos^2(\theta)$ so, substituting we have=> $2(\text{sen}^2(\theta))^*(\cos^2(\theta))$ so, we conclude with $\sin^2(2\theta)$.
24 September at 19:52 · Like

[redacted] That just made my eyes water. I can't make sense of it.

I got the same answer as you except with a half at the front and it was correct. *Shrug*
24 September at 20:00 · Like

[redacted]
24 September at 20:04 · Like

[redacted] $2(\sin x)^2(\cos x)^2 = (2\sin x\cos x)(\sin x\cos x) = (\sin(2x))(\sin(2x)/2) = 1/2(\sin(2x))^2$
24 September at 20:07 · Like · 1

[redacted] remember $\sin(2x) = 2\sin x\cos x$
24 September at 20:07 · Like · 1

[redacted] I think I know where you've gone wrong.

$2\sin^2\theta\cos^2\theta \neq \sin^2(2\theta)$.
24 September at 20:07 · Like · 1

[redacted] Right! Thank you!
24 September at 20:08 · Like

[redacted] I did the following:

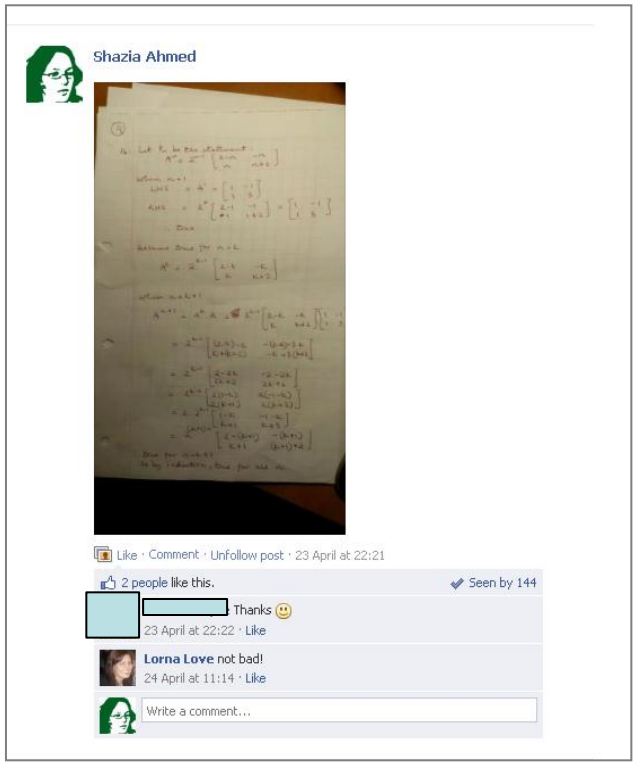
$2\sin^2\theta\cos^2\theta = 2\sin\beta\cos\beta(\sin\beta\cos\beta)$
$= \sin2\theta(\frac{1}{2}\sin2\theta)$
$= \frac{1}{2}\sin^2(2\theta)$

=]
24 September at 20:12 · Like

[redacted] Yeah, I underestimated this question... And I did WRONG! lol.
24 September at 20:15 · Like

[redacted] Teamwork got us there in the end. [redacted] yeah!
24 September at 20:16 · Like

Example 4: Virtual Maths Support



University of Glasgow

Student feedback

“On the whole I feel the most useful thing about the Facebook page is that it makes it easier to talk to people who you don't really know, and who you would find it difficult asking the same questions of in person.”

“Keep going with these Facebook groups and try as hard as possible to get EVERYONE in the group as early as possible in first year. In my experience as a student who travels in, it helps feel a part of the University. Without the Facebook groups I would feel a lot more isolated and probably at lot less engaged.”

“ I like the informal setting of it to be honest with you, it doesn't feel like a chore checking up on here rather than Moodle which I associate purely with Univeristy and working etc. never been on Moodle at the weekend.”

“Moodle is like the school noticeboard, facebook is the bunch of students chatting in front of it.”

Student Feedback

“There are people who will share there answers, methods for doing a problem. Its like being in a tutorial sometimes. Personally it gives me confidence because if someone posts a question that you were stuck on also...it makes you feel less stupid because you know that other people are also struggling with some concepts in the course, its not just you.”

“They work. They are well set up, they look good. Already logged in.”

“I feel that the facebook pages are well-managed/curated by the university staff - there to help when we need it yet able to stand back when we're having a mild moan and I'm glad that we have them.”

University of Glasgow

Where we are now

- Rolled over last year's 'subject' groups. e.g. 'SLS Level 1 Maths 2012-13' has become 'SLS Level 2 Maths 2013-14'

- Numbers of members in each group are in the hundreds, e.g., the new 'SLS Level 2 Mathematics' has 164 members

- Experience has been extremely positive

- Interaction has been both Social and Academic

New Developments

Student Learning Service ‘Science and Engineering 2013-14 Entrants’ group
Invited students by email (via Admissions)
College wide-group signposts subject-specific groups for every ‘Sci/Eng’ discipline

Over 500 students in ‘Science and Engineering group’.

Very hectic. Students have a lot of questions!
‘Subject choices?’ ‘When do we get book lists?’ ‘Who is staying in which Halls?’

Pre-Arrival Positives:

- Friendships forming
- All Science students in group knows about the 3 subject issue
- All students studying Maths know about the Skills Test

University of Glasgow

Thank you

SLS Facebook page

https://www.facebook.com/StudentLearningService

SLS Twitter

https://twitter.com/GlasgowUniSLS

Managing Virtual Learning Spaces

https://www.facebook.com/groups/1254718765832/