

Mathematics Learning Support across a multi-campus institution: Virtual Drop-in

Cormac Breen, Ciaran O'Sullivan
& Damian Cox

*Dublin Institute of Technology,
Institute of Technology Tallaght,
Institute of Technology Blanchardstown*

IMLSN Workshop 29th May 2015

π



Setting the Scene

- › Three Institutes intending to form the Technological University for Dublin:
 - The Dublin Institute of Technology (DIT)
 - The Institute of Technology Blanchardstown (ITB)
 - The Institute of Technology Tallaght (ITTD)

- › It is important that Mathematics Learning Support (MLS) provision evolves in a manner that best suits the needs of the students across the three Institutes

Outline of study

- › Audit of existing and historical MLS provision
- › Survey of staff and students across the three Institutes
 - Staff who teach Mathematical/Statistical Modules
 - Students who have engaged with MLS
- › Trial of virtual drop-in service

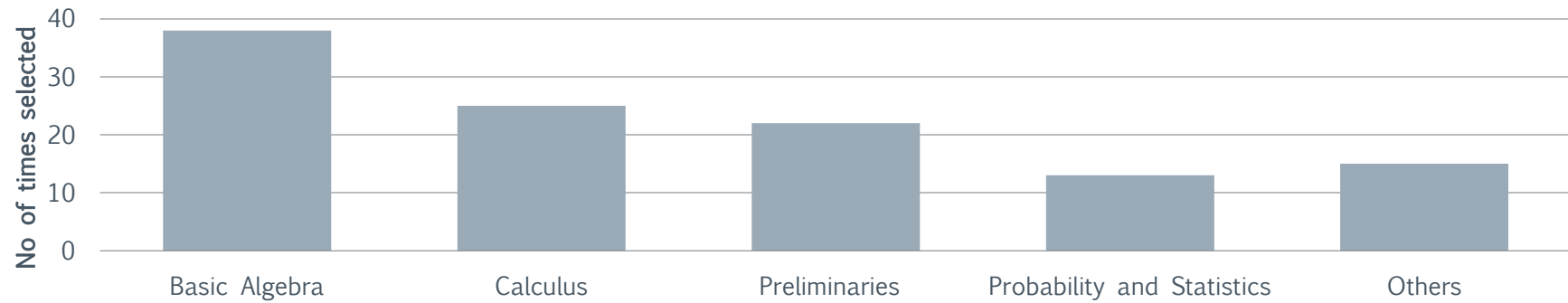
Survey

Survey Questions

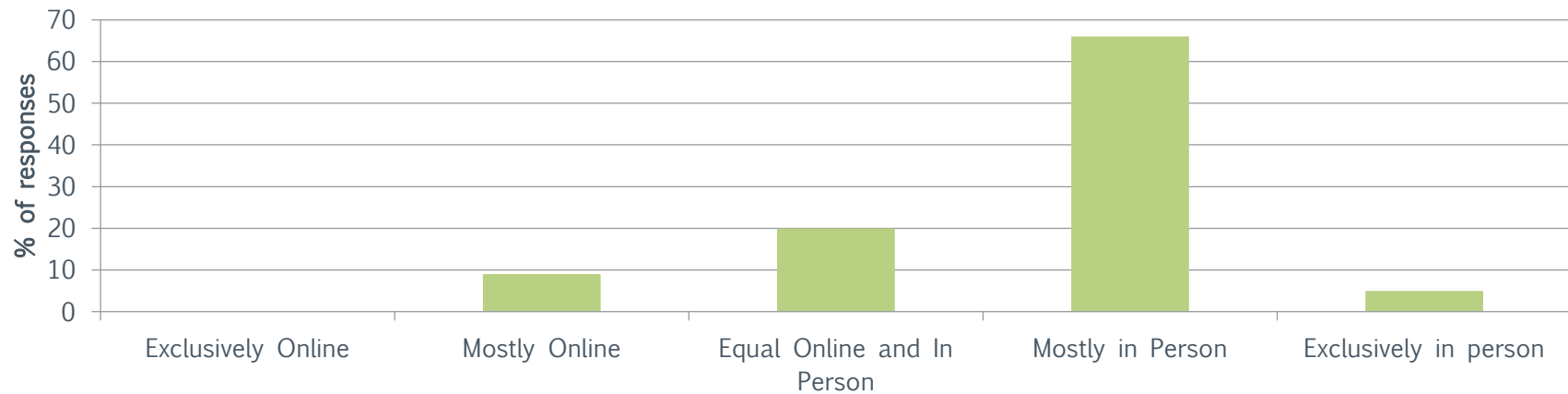
- › In your opinion, what are the three main topics that students would require MLS for?
- › Please indicate your preference for how this MLS would be delivered?
 - 5 point scale from exclusively online to exclusively in person
- › Topic responses were organised into 5 categories
 - Basic Algebra (e.g. logarithms, indices), Calculus, Preliminaries (e.g. fractions, basic numeracy, percentages), Probability and Statistics and an Other category

Overall Staff Results (45 responses)

Overall Topics

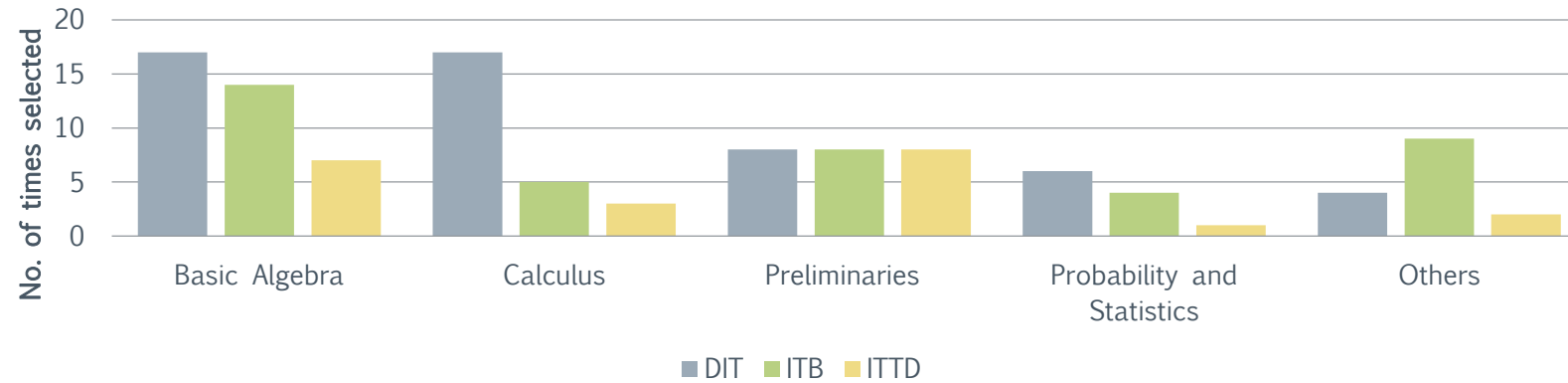


Overall Staff Preferences

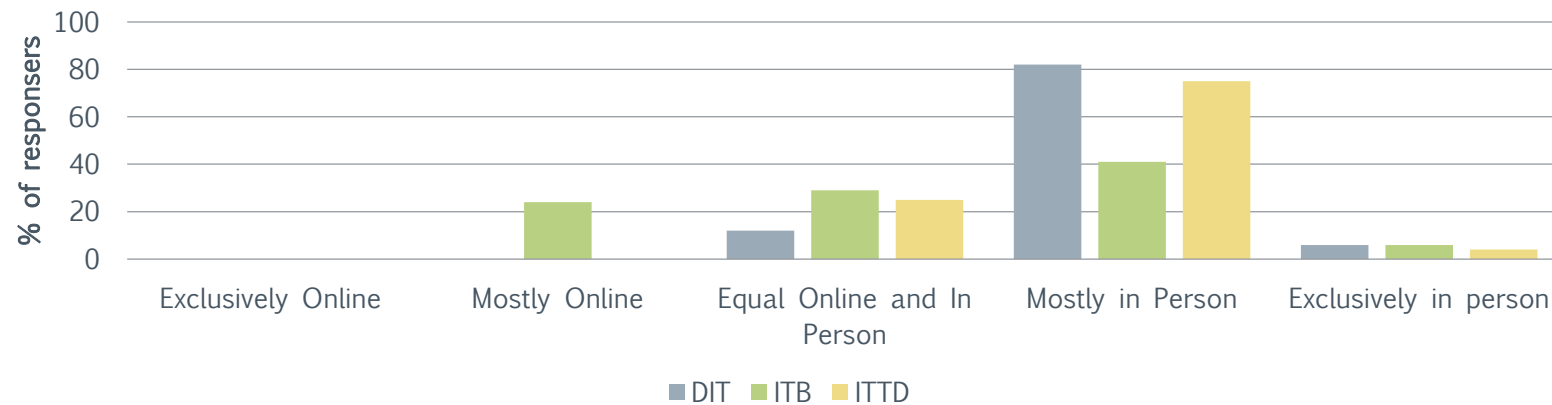


Staff Responses Per Institutes

Topics by Institution

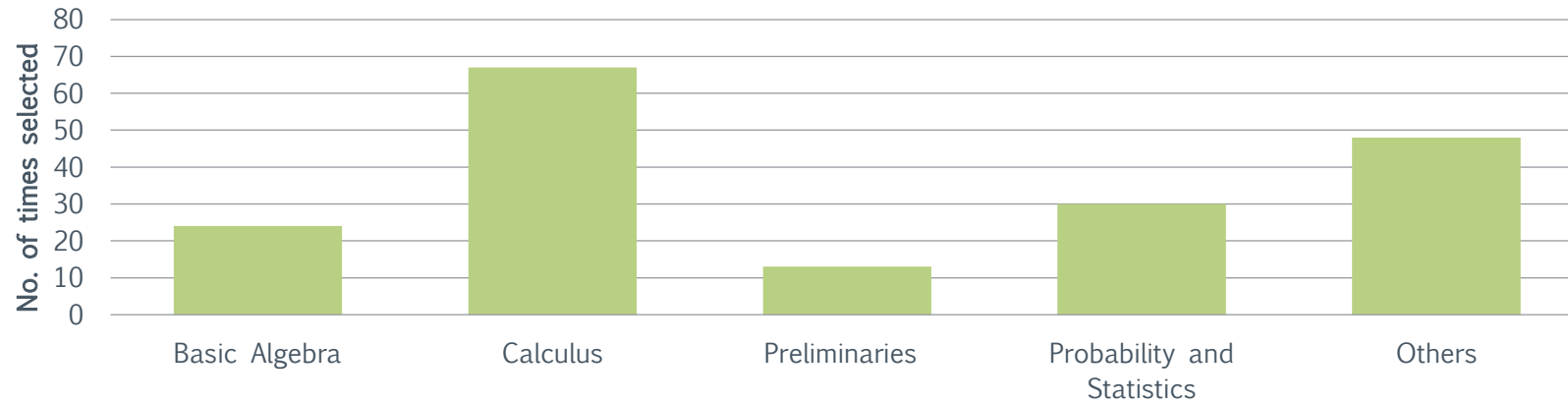


Preference by Institution

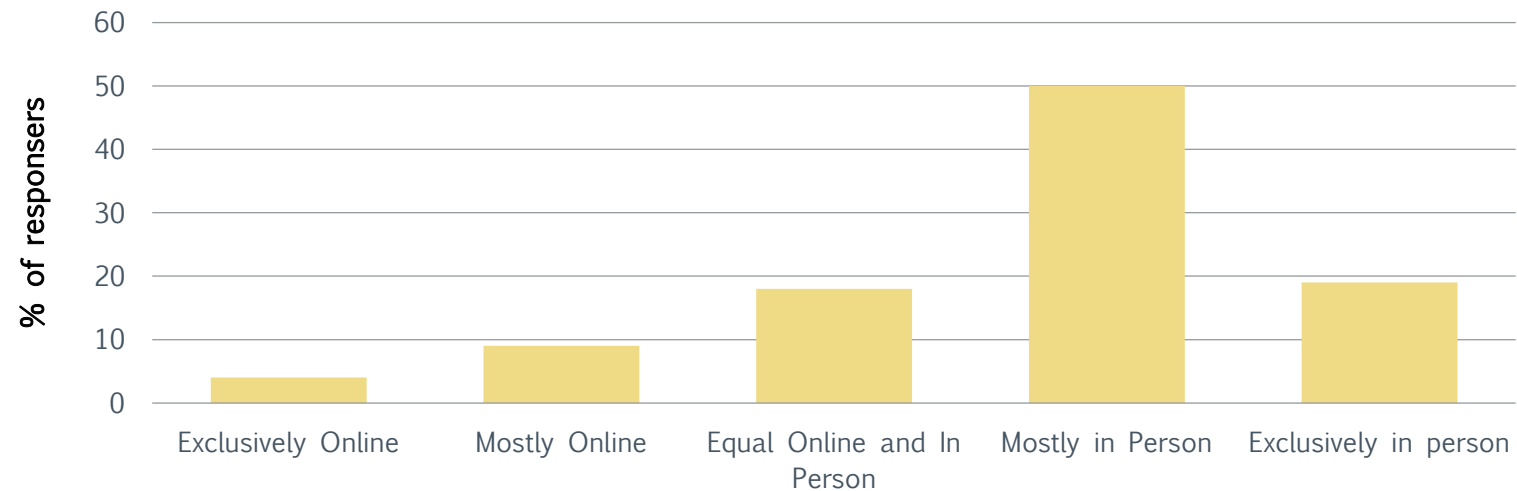


Student Overall Responses (115 responses)

Overall Student Topics

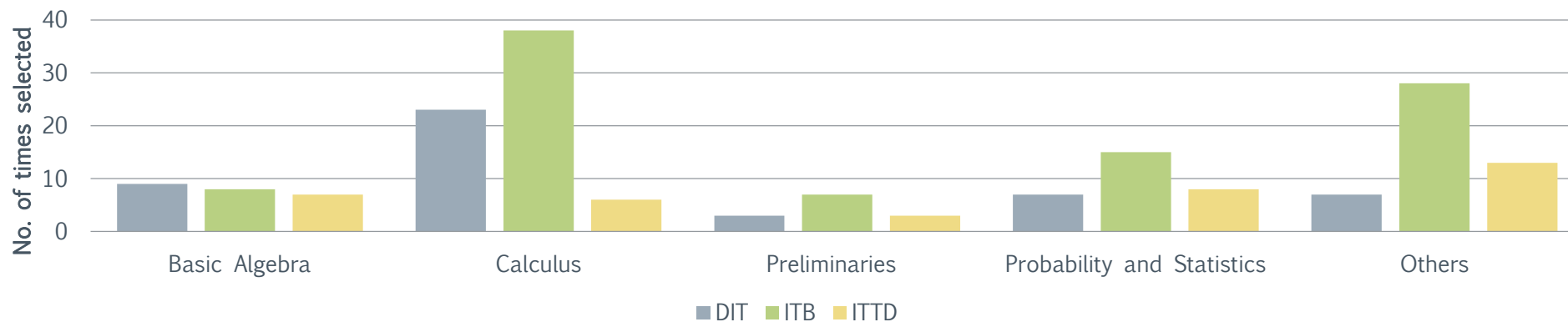


Overall Student Preferences

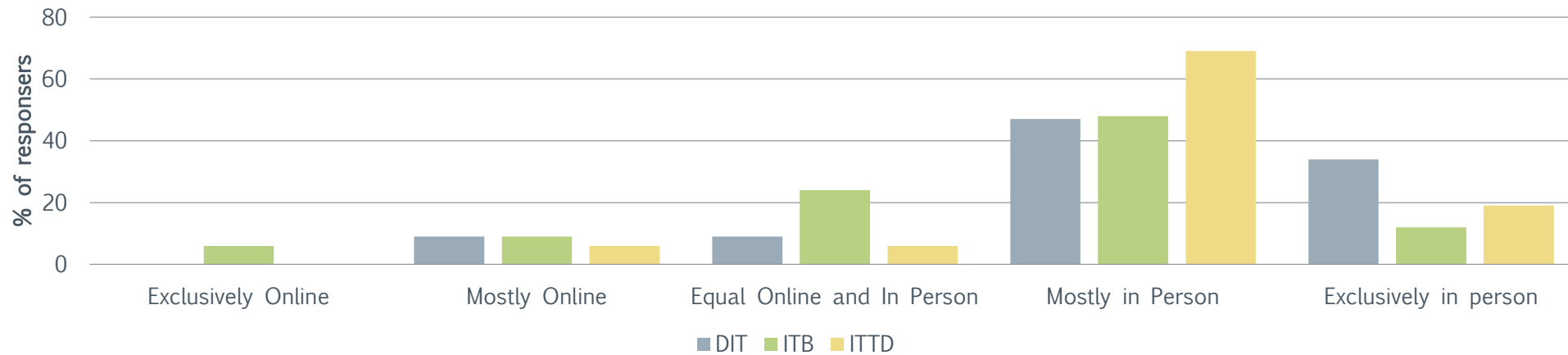


Student Responses per Institute

Student Topics by Institution



Student Preferences by Institution



Comparison of staff and student responses

	Algebra	Calculus	Preliminaries	Probability and Statistics	Other
Staff	34%	22%	19%	12%	13%
Students	13%	37%	7%	16%	26%

Difference in topic choices is highly statistically significant.
($P < 0.0001$, χ^2 analysis)

	Exclusively Online	Mostly Online	Equal Mix	Mostly in Person	Exclusively in Person
Staff	0%	9%	20%	66%	5%
Students	4%	9%	18%	50%	19%

Conclusions of Survey

- › Majority of staff and students would like to see MLS provided primarily in person
- › Strong preference that some portion of the MLS provision is offered online

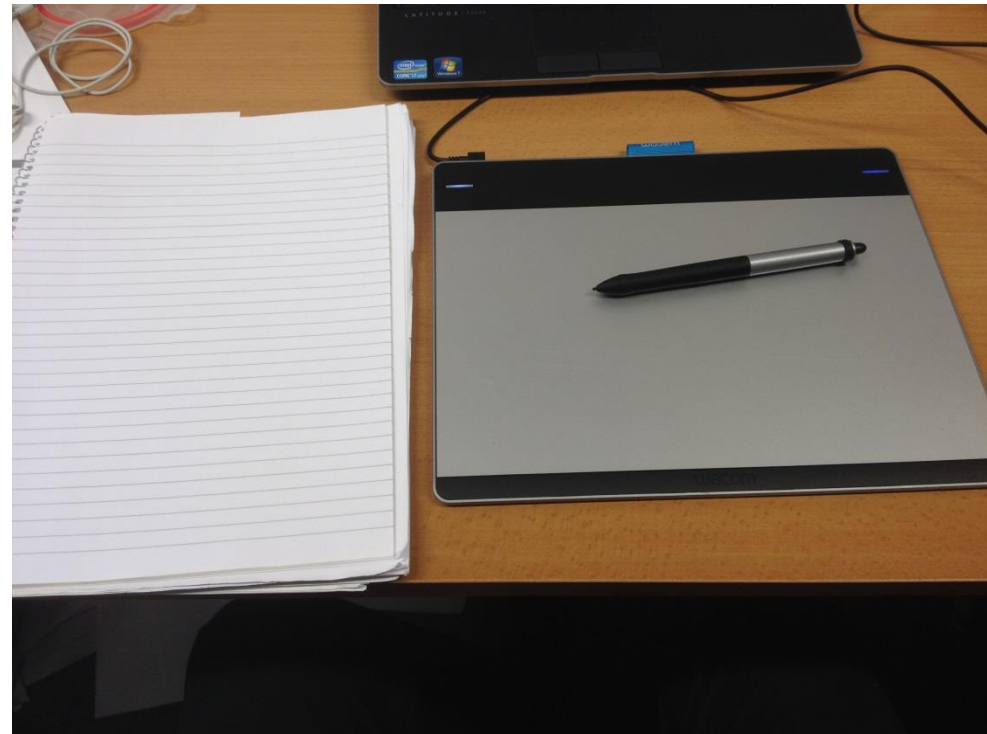
Conclusions of Survey

- › Among both staff and students in ITB, there appears to be a greater preference for the online provision of MLS than in the other two Institutes
- › There is also some variation in the topic choices between the three Institutes; this should be reflected in the provision of MLS

Trial

Technology

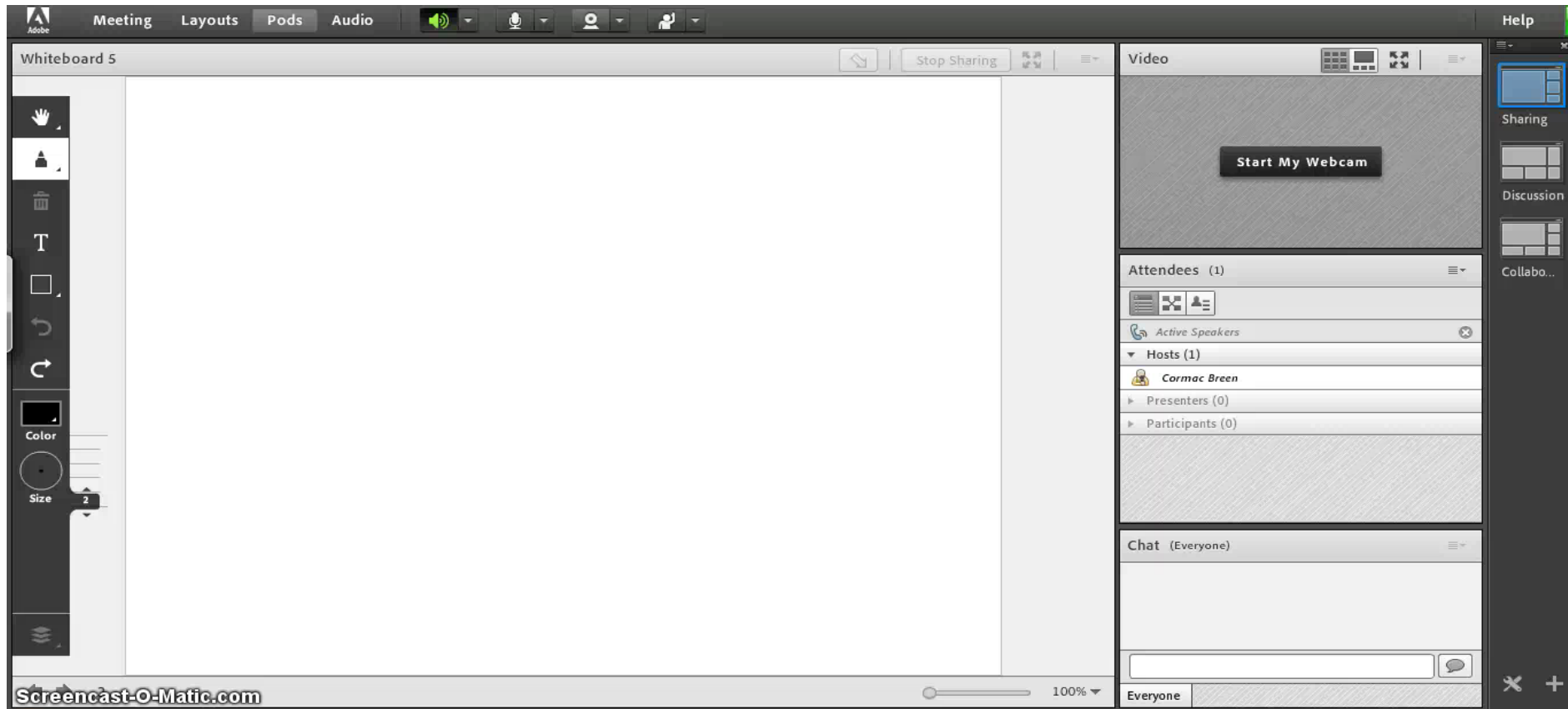
- › Received seed funding from the DIT Learning Teaching and Technology Centre to purchase 3 tablets
- › Wacom Intuos Tablets





Technology

› Adobe Connect Video Conferencing Technology



Trial Details

- › Initial trial involving staff members
- › Second trial involved 5 students from IT Tallaght and a staff member from DIT
 - Each student posed a question on the shared whiteboard
 - Lasted approximately 45 minutes
 - Feedback from each student

Feedback

› Overall Impression

- › ‘I was very impressed, I think it's a great way to help students with Maths questions. Aside from the slow internet feed I think it has great potential and I'm definitely keen to see it up and running.’
- › ‘It has potential but I feel unless it becomes more streamlined I could see students becoming more frustrated than helped. The interface seems clunky and un-intuitive’
- › ‘Great idea, software was a little clunky and internet connection or lack of was a hindrance, But can easily be taught and overcome’

Feedback

› Advantages

- › ‘It will help people learn or ask questions easier who are shy or ashamed to do so in class’
- › ‘Whereas the virtual drop-in gives a larger scope of time and geographical location.’

› Disadvantages

- › ‘If the lecturer on virtual drop-in uses different techniques to solve questions as opposed to classroom lecturer, it may be confusing and take longer to help solve a problem’
- › ‘may get overloaded with students who don't bother going to class as they see this system as a substitute for class attendance’

Feedback

- › Recommendations
- › ‘Use external microphone and speakers or headphones to eliminate the echo effect’.
- › ‘Use a speed scanner to scan the Example questions or problem sheets faster to save time writing it on the pad’.
- › ‘Web cam/Web cast with the cameras facing whiteboards on either side of the link’
- › ‘A platform for posting question and receiving answers in a timely fashion’

Thank You



Questions?