Active Learning Without Dreaded Break Out Rooms

Stephanie Reikes
About Georgia Tech

Located in Atlanta

32,722 Total Enrollment
16,047 Undergrad

87% Graduation Rate

8th Public University by US News & World Report

32 Average ACT

1439 Average SAT

97% First Year Retention

61% Residential
Graduation Rates

Avg (µ) Graduation Rates by College of Study (2010-2017)

- Scheller College of Business: 45.8% 86.5% 85.6%
- Ivan Allen College of Liberal Arts: 44.1% 88.5% 86.0%
- College of Sciences: 44.1% 83.8% 81.7%
- College of Engineering: 28.4% 85.9% 79.8%
- College of Design: 41.5% 85.8% 81.9%
- College of Computing: 47.4% 84.9% 81.2%
Current Structure

- Math 1111
  - 4 credits

- Math 0999
  - 2 credits

- Math 1113
  - 4 Credits

- 1 Instructor
Current Grading at Tech

• Math 1111
  • A, B, C, D, F, S, U
    • Passing A, B, C, D, S
    • Failing F, U

• Math 0999
  • A*, B*, C*, F*
    • Passing A*, B*, C*
    • Failing F*

• Math 1113
  • A, B, C, D, F, S, U
    • Passing A, B, C, D, S
    • Failing F, U

For Math 1111 and 1113, D is for Done!
Fall Semester Experience

Thoughts on Break Out Rooms?
Active Learning w/ Polling

1. Turning Point
2. Poll Everywhere
3. Kahoot
Turning Point

- Cost: Free
  - Contract with Georgia Tech
- Not user friendly
- Each question in different poll to view answer afterwards
- Required students to login
Poll Everywhere

- Cost: Free up to 40 students
- User Friendly, Simple in Design
- No student login required

<table>
<thead>
<tr>
<th></th>
<th>Higher ed free</th>
<th>Student pays</th>
<th>Individual instructor</th>
<th>Department-wide</th>
<th>University-wide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unlimited questions</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Audience Size</td>
<td>40</td>
<td></td>
<td>Limit based on class-size</td>
<td>700</td>
<td>700+</td>
</tr>
<tr>
<td></td>
<td>Free</td>
<td>$13.99 per student</td>
<td>$349 per semester</td>
<td>$2,500+</td>
<td>$10,000+</td>
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</table>
Kahoot!

- Cost: Free up to 50 students
- User Friendly, Bold Design
- No student login required

Higher education player limits

<table>
<thead>
<tr>
<th>Mode</th>
<th>Basic</th>
<th>Plus</th>
<th>Pro</th>
<th>Premium</th>
<th>Premium+</th>
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<tbody>
<tr>
<td>Live game</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Challenge</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>2000</td>
<td>2000</td>
</tr>
</tbody>
</table>

- **Plus**: Host games for up to 100 players, collaborate with colleagues, and unlock more game options. $5 per teacher/month (billed annually).
- **Pro**: Host games for up to 200 players, and access more question types and distance learning features. $10 per teacher/month (billed annually).
- **Premium**: Host games for up to 2000 players and access our full suite of question types and distance learning features. $15 per teacher/month (billed annually).
Google Jamboard

Find the slope of 
\( (1, -3) \) and \( (-4, 7) \)

\[
\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - (-3)}{(-4) - 1} = \frac{10}{-5} = -2
\]

Example (View Only):

https://docs.google.com/document/d/1RnnBxSIU6AFnPY4vIUKJOFTGysk8HHdMH9DNcbR06pc/edit?usp=sharing

Practice Jamboard for everyone to try….

https://jamboard.google.com/d/1psFVHaeFautZ7Atbsn5CtdAHDQ1-a9eHMHVGFYqDM/edit?usp=sharing
Worksheets

Simple worksheets, but implementing “Three before Me”

Three Before Me: Before an instructor will answer a question (or give a hint), the student has to consult three other resources to try and find the answer to their question (another student, textbook, google, etc.).

“Agree before Me”

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Math 1113 Studio Problems 1/26/2021

1. Solve for x using the quadratic formula:

\[4x^2 - 6x = 14\]

2. Solve for x using the square root method:

\[-2x^2 + 15 = x^2 - 12\]

3. Solve for x by factoring:

\[x^2 - 13x = 30\]

4. Solve for x by completing the square:

\[x^2 - 8x = -5\]
Play a Game: “Secret Word”

**Possible Answers:**

<p>| | |</p>
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<tbody>
<tr>
<td>A</td>
<td>48</td>
</tr>
<tr>
<td>B</td>
<td>$\frac{1}{2}x^4 - 8x^2 + 5$</td>
</tr>
<tr>
<td>C</td>
<td>$\frac{1}{2}x + 1$</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
</tr>
<tr>
<td>F</td>
<td>$x^2$</td>
</tr>
<tr>
<td>G</td>
<td>$-</td>
</tr>
<tr>
<td>H</td>
<td>15</td>
</tr>
<tr>
<td>I</td>
<td>$\sqrt{-(x + 3) - 2}$</td>
</tr>
<tr>
<td>J</td>
<td>15</td>
</tr>
<tr>
<td>K</td>
<td>0</td>
</tr>
<tr>
<td>L</td>
<td>$x^2 + 9x + 8$</td>
</tr>
<tr>
<td>M</td>
<td>$</td>
</tr>
<tr>
<td>N</td>
<td>$2x^4 - 16x^2 + 6$</td>
</tr>
<tr>
<td>O</td>
<td>$2x^2 - 3$</td>
</tr>
<tr>
<td>P</td>
<td>$2x + 1$</td>
</tr>
<tr>
<td>Q</td>
<td>20</td>
</tr>
<tr>
<td>R</td>
<td>6</td>
</tr>
<tr>
<td>S</td>
<td>$\sqrt{-x + 3 - 2}$</td>
</tr>
<tr>
<td>T</td>
<td>$x + 2$</td>
</tr>
<tr>
<td>U</td>
<td>$\sqrt{2x^2 - 3}$</td>
</tr>
<tr>
<td>V</td>
<td>18</td>
</tr>
<tr>
<td>W</td>
<td>$-21x - 31 + 2$</td>
</tr>
<tr>
<td>X</td>
<td>120</td>
</tr>
<tr>
<td>Y</td>
<td>$x^2 - 8x^2$</td>
</tr>
<tr>
<td>Z</td>
<td>12</td>
</tr>
</tbody>
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Class Communication
Questions? Thoughts? Discussion?

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