Effective Use of Learning Analytics in Synchronous Online Classes

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Rutgers
The Agenda
Agenda

1. Learning Analytics theory
2. Discussion: Using Learning Analytics during a synchronous online class
3. Get your feedback on Learning Analytics Dashboard designs in BigBlueButton
Learning Analytics Theory
Defining Learning Analytics

“The measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.”

(Siemens, 2011)
Limitations

- Shows you a small piece of the picture
- Technology impacts the data
- The data provides a lot of information faculty can use
  - Interpretations and actions are taken by the faculty member
Working with what we have...

(Guzman-Valenzuela et al., 2021; Selwyn, 2019)
Learning means...

There was a change in the brain

(Bransford, Brown & Cocking, 2000; Bruning, Schraw & Norby, 2011; Hardiman, 2012; Weinstein, Sumeracki, & Caviglioli, 2018)
Research On Learning

- Better retention when new info. is linked to prior knowledge
- Expert knowledge is highly organized vs novices
- Constructive, timely feedback is essential

(Bransford, Brown & Cocking, 2000; Hardiman, 2012; Kettle & Haubl, 2010; Van der Kleij, Feskens, & Eggen, 2015)
Strategies In Synchronous Platform

- Custom questions in registration
- Polls
- Whiteboard
Group Discussion

- Do you use any analytics today?
  - What is the benefit?
- How do you assess a student’s performance during a synchronous class?
- If you could wave a magic wand, what analytics would you like to access during a synchronous class?
Feedback On Learning Analytics Dashboard In BigBlueButton
BigBlueButton is a virtual classroom
Use of BigBlueButton

French Ministry of Education

You regularly organize meetings
You are an agent of the State, create an account to organize and keep your meetings.

Login or create an account

Currently there are 57 webinars and 323 participants on an average capacity for the platform of 45,000 participants.

US Air Force
Virtual Classroom != Video Conference

Three areas of focus

Integration  Engagement  Analytics
Focus on Engagement

Raise Hand
Public/Private Chat
Emojis
Multi-user Whiteboard
Polling
Shared Notes
Breakout Rooms
Focused on adding analytics **during** your synchronous online class
Learning Analytics Dashboard

We recently added a live Learning Analytics Dashboard designed to answer three questions:

1. Who is **Attending**?
2. Who is **Engaged**?
3. Who is **Learning** (based on answers to polls)?
Accessing The Dashboard

Instructor can Launch
Attendance and Engagement

Learning Dashboard

ENGL-203: Research Methods in English

-Sep 1, 2021 Active
  Duration: 00:08:05

3 Active Participants
2 Polls
1 Raise Hand
5 Activity Score

Overview

<table>
<thead>
<tr>
<th>PARTICIPANT</th>
<th>ONLINE TIME</th>
<th>TALK TIME</th>
<th>WEBCAM TIME</th>
<th>MESSAGES</th>
<th>EMOJIS</th>
<th>RAISE HANDS</th>
<th>ACTIVITY SCORE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>00:05:05</td>
<td>00:00:52</td>
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<td></td>
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<tr>
<td>Alex</td>
<td>00:03:18</td>
<td>00:00:01</td>
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<td></td>
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<td></td>
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</table>
Who Is Attending?

- Updated every 10 seconds

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Learning Analytics Dashboard

Home Room

9 Active Users
1 Polls

Overview

<table>
<thead>
<tr>
<th>USER</th>
<th>ONLINE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binoy Wilson</td>
<td>01:07:09</td>
</tr>
<tr>
<td>Frederick Dixon</td>
<td>01:07:02</td>
</tr>
<tr>
<td>Brendan taggart</td>
<td>01:04:27</td>
</tr>
<tr>
<td>Darrel</td>
<td>01:04:36</td>
</tr>
<tr>
<td>Don Hazelwood</td>
<td>01:00:21</td>
</tr>
<tr>
<td>Jeff (moodle)</td>
<td>01:01:22</td>
</tr>
<tr>
<td>Jim Mezzanotte</td>
<td>01:00:30</td>
</tr>
<tr>
<td></td>
<td>03:01:52 PM</td>
</tr>
<tr>
<td>TALK TIME</td>
<td>WEBCAM TIME</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
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<tr>
<td>00:00:48</td>
<td>01:05:00</td>
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<tr>
<td>00:36:51</td>
<td>01:05:31</td>
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<td>00:00:22</td>
<td>00:00:13</td>
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<td>00:07:58</td>
<td>00:59:32</td>
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<tr>
<td>00:02:09</td>
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<td>00:06:12</td>
<td>00:47:49</td>
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<tr>
<td>00:03:33</td>
<td>00:06:29</td>
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</table>
## Who Is Learning (Based On Polls)?

<table>
<thead>
<tr>
<th>POLL 1</th>
<th>WHO DISCOVERED THE ATOM?</th>
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</thead>
<tbody>
<tr>
<td>True</td>
<td>John Dalton</td>
</tr>
<tr>
<td>True</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POLL 1</th>
<th>POLL 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>True</td>
<td>A</td>
</tr>
<tr>
<td>False</td>
<td>B</td>
</tr>
<tr>
<td>True</td>
<td>A</td>
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</tbody>
</table>
Feedback on Learning Analytics Dashboard Feedback
Learning Dashboard
random-3359413

Overview

<table>
<thead>
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<th>WEBCAM TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>User 1</td>
<td>19:42:25</td>
<td>00:01:14</td>
<td></td>
</tr>
<tr>
<td>User 2</td>
<td>19:42:22</td>
<td>00:01:53</td>
<td></td>
</tr>
<tr>
<td>User 3</td>
<td>19:42:16</td>
<td>00:01:00</td>
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</table>

Last updated at 1:03 PM February 15, 2022
Learning Dashboard
random-3359413

3 Active Users
7 Activity Score

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<td>00:01:14</td>
<td></td>
</tr>
<tr>
<td>User 2</td>
<td>19:42:32</td>
<td>00:01:53</td>
<td></td>
</tr>
<tr>
<td>User 3</td>
<td>19:42:26</td>
<td>00:01:00</td>
<td></td>
</tr>
</tbody>
</table>

Messages: 4
Emojis: 1
Raise Hands: 0
Poll Votes: 2

Polls

<table>
<thead>
<tr>
<th>Poll</th>
<th>Response</th>
<th>Most Common Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 + 2 = 4?</td>
<td>True</td>
<td>N/A</td>
</tr>
<tr>
<td>In favor?</td>
<td>Yes</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Last updated at 1:03 PM February 15, 2022
References


