Beyond Retention
• As a key supplier of personal e-Textbooks to over 45 universities in the UK, we have been delivering for a number of years detailed Analytics in the use of these key study materials

• These detailed analytics record use of the resources via both our web interface and our apps for all the major systems

• We record each action that users make in the books – logging in, turning pages, time spent on pages, access route, features used, time of day and day of week and all linked in to each student record
Kortext Analytics

<table>
<thead>
<tr>
<th>Students</th>
<th>Activity</th>
<th>Courses</th>
<th>Books</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Students</td>
<td>Total Pages Viewed</td>
<td>Total Courses</td>
<td>Book Allocated</td>
<td>Average Page Views</td>
</tr>
<tr>
<td>24</td>
<td>6,490</td>
<td>1</td>
<td>192</td>
<td>360.56</td>
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<tr>
<td>Registered Users</td>
<td>Pages Read</td>
<td>Total Modules</td>
<td>Downloads</td>
<td>Average Page Reads</td>
</tr>
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<td>11</td>
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<td>15</td>
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<tr>
<td>Active Users</td>
<td>Prints and Copies</td>
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<td>Average Prints Copies</td>
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<tr>
<td>Registered Users %</td>
<td>Bookmarks</td>
<td></td>
<td></td>
<td>Average Books</td>
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<tr>
<td>45.83%</td>
<td>49</td>
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<td></td>
<td>5.00</td>
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<tr>
<td>Active Users %</td>
<td>Notes</td>
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<td>Average Annotations</td>
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<tr>
<td>Bookmarks</td>
<td>Highlights</td>
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<tr>
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<td>278</td>
<td></td>
<td></td>
<td>26.33</td>
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</tbody>
</table>

Total Pages Viewed by Day, Period and Hour

- Monday: 31.8%
- Tuesday: 29.7%
- Wednesday: 12.2%
- Thursday: 7.5%
- Friday: 12.1%
- Saturday: 1.8%
- Sunday: 4.8%

Pages Viewed by Device

- Web: 32.9%
- Android: 33.3%
- iOS: 17.0%
- Mac: 2.5%
- UWP Win: 10.14.3%
Analytics and Curriculum Design

• Data can be used to refine and improve curriculum design
• Knowing which chapter of the book students use most
• Knowing which page is most visited
• Knowing which terms are most searched
• This allows for additional real time support, reflection and curriculum review
Curriculum Design

- Do students need extra support on a topic?
  - 2 lectures instead of 1 etc
- Do you need to provide additional or alternative viewpoints?
- Are examples up to date?
- Reading data can be combined with other performance metrics to give a more complete overview of concept mastery
Detailed analytics are not just about student retention and achievement.

Using Analytics around the Kortext etextbooks, other detailed library analytics and analytics from suppliers of bursary schemes a clear link between resources and achievement can be shown.

Universities can then target spending and support on the services that support their students best.
Student Progression

- Bringing together this study behaviour with the data in the Jisc Datawarehouse allowing us to present a strong picture of student progression

- On a large dataset you can quickly start to identify strong patterns in behaviour
  - Engagement in resources
  - Attending Lectures
  - Background student data
  - Grades
  - All these and more can be used to predict student outcome
Prediction to Outcome

• Using past data, you can fine tune algorithms to give good predictive data
• These predictions can then be used to make suggestions to help improve grades. This is likely to be especially beneficial for students predicted to be around the edge of a grade.
• However these are not firm outcomes, but predictions
  • Handle with care
  • Recommend academic intervention not machine led
  • Gives grade prediction and suggested activities to enhance probability of achieving better grade
Identifying unusual outcomes

- Essay mills have been in the news a great deal recently, with concern over students purchasing high grade essays.
- As we know these essays are more difficult to detect using traditional anti-plagiarism software.
- Analytics can be used as another weapon against the use of these assignments.
- Analytics software can be used to check use of resources such as etextbooks, library resources and VLE items in the weeks leading up to an assignment.
- They can be configured to pick up either generally out of place high grades or more generally good grades when engagement analytics are low.
- Although these are not conclusive it can alert a tutor to investigate more closely.
Partnership with Microsoft

- Kortext has a strong partnership with Microsoft
- Power BI embedded service has been in use for over a year in our Kortext Analytics service
- We are working with Microsoft to ensure the predictive and prescriptive analytics are using the latest machine learning and AI technology
Partnering with Kortext

- Kortext is now looking to work with University partners
- Currently building Analytics for our reading list service KeyLinks
- Combining Jisc Data warehouse with other data a key aspiration