Effect of learning resources on Mendeley user adoption and productivity

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What is Mendeley

- Mendeley is an easy-to-use reference management tool on top of a social collaboration network
- 4+ million researchers and students currently use Mendeley. Hundreds of academic institutions also claim it as their preferred researcher tool!
Objectives & Hypotheses

Our objectives

• To understand the user adoption pattern of a reference management tool such as Mendeley
• To understand differences between discipline and academic statuses and how they are affected by different structured and just-in-time learning and support resources.

Our hypotheses

• Libraries can improve usage of reference management tools if they adopt a mix of learning support services
• Structured support is more effective than ‘just-in-time’ support
• Support for early career researchers is more effective than for seasoned researchers
• Support for different disciplines should be adapted
Analysis Method & Definitions

1. Usage analysis ("All" = all US and Canadian academic institutions)
   • Baseline: “All” compare to the 6 partners (February 2014 – February 2015, 12 months)
   • Control: “All” compare to the 6 partners (March – May 2015, 3 months)
   • Test: “All” compare to the 6 partners (March – May 2015, specific review based on activity diaries)

2. User feedback survey
   • 162 users provided feedback on how and what resources they used to learn Mendeley

Parameter | Definition
--- | ---
Total user (#) | Total # of Mendeley users registered with an institutional email
New users (#) | # of new signed-up Mendeley users within a time period
Active user (#) | # of users with >1 activity in the past 6 months
Analysis: User Adoption Metrics – Baseline (New Users)

- Mendeley user adoption is highly seasonal because of the influences of academic institutional terms
- Highest new user adoption months are September and January matching to the start of new school terms
Analysis: User Adoption Metrics – Baseline (Active Users)

Mendeley active user numbers are also seasonal because of the influences of academic institutional terms.

A positive correlation ($R^2 > 0.5$) can be noticed in the active user numbers as new users continue to join Mendeley.
• “New user” adoption of the 6 partner university seem to remain relatively consistent to the CONTROL line.

• However, activities specifically at Stanford.edu, Yorku.ca, and MSU.edu have resulted in different patterns
• “Active users” from the 6 partner university seem to remain stable across all groups.
• They appear relatively consistent from 2014 to 2015
Analysis: Library Activity Analysis

Definition

• **Structured on-line** (librarian initiated): Library websites, LibGuide, Tutorial videos

• **Structured in-person** (librarian initiated): Classroom training, department updates, research group meetings, Research day events, Graduate services/ undergraduate services

• **Ad hoc on-line** (user initiated): online library chat, email, phone call

• **Ad hoc in-person** (user initiated): In library inquiry

• **Social, promotions**: Blog, Twitter, Facebook, Posters, eNewsletter
## Analysis: Library Activity Analysis

Total amount of ‘Mendeley’ learning resources applied by each university through March – May 2015

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Carnegie Mellon University</th>
<th>Michigan State University</th>
<th>Montana State University</th>
<th>Stanford University</th>
<th>Touro College</th>
<th>York University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structured on-line</td>
<td>64%</td>
<td>0%</td>
<td>20%</td>
<td>7%</td>
<td>25%</td>
<td>58%</td>
</tr>
<tr>
<td>Structured in-person</td>
<td>21%</td>
<td>80%</td>
<td>70%</td>
<td>21%</td>
<td>63%</td>
<td>12%</td>
</tr>
<tr>
<td>Ad-hoc on-line</td>
<td>0%</td>
<td>20%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>11%</td>
</tr>
<tr>
<td>Ad-hoc in-person</td>
<td>14%</td>
<td>0%</td>
<td>5%</td>
<td>71%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Social, promotion</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td><strong>TOTAL HOURS</strong></td>
<td><strong>14</strong></td>
<td><strong>10</strong></td>
<td><strong>10</strong></td>
<td><strong>7</strong></td>
<td><strong>4</strong></td>
<td><strong>54</strong></td>
</tr>
</tbody>
</table>

*March – May 2015 Total library activities tracked by 6 partners*
Analysis: Library Activity Analysis

• The 6 partner universities documented a total of 99 hours of libraries supporting Mendeley users during March – May 2015.
• It is difficult to draw correlations based on limited data as well as not optimal user activity period.
• But it is interesting to see, again, the positive ‘new user’ and ‘active user’ activities during April in almost all the institutions.

*March – May 2015 Total library activities tracked by 6 partners
Analysis: User Adoption Metrics - Test

New users by Institution by day

1. March 9: 9 new users from York → Structured in-person demo of Scopus & Mendeley
2. March 30: 15 new users from Stanford in 3 days → Possible normal fluctuation
3. April 6: 12 new users from Stanford → Gear Up Day for Research
4. April 21: 19 new users from Stanford → Structured in-person demo for Freshman
5. May 21: 11 new users from York → Structured in-person demo

Structured in-person demo’s appear to have the biggest immediate adoption impact. However, other promotional activities (such as Research Day) seem to have a multi-day effect.

*York University averages 1 new user/ day. Stanford averages 2.5 new users/ day.
Analysis: User Feedback Survey

• User feedback survey was deployed to all current Mendeley users within the 6 partner institutions.
• Survey ran from May 18 – 29, 2015 for 12 days
• 181 total respondents. 19 excluded from analysis for various errors
• 162 responses used for rest of the study
Analysis: User Feedback

1. “Colleagues/ collaborator” recommendation is the highest impact in all academic statuses

2. Professors are then most affected by “Online video & tutorial” as well “newsletters and direct emails”

3. “Library website” has high impact on researchers

4. “Library training sessions” has high impact on Ph.D.s

*Total respondents = 162. Survey conducted May 18 – 29, 2015
1. “Colleagues/ collaborator” recommendation is the highest impact in all disciplines

2. “Online video & tutorial” has high impact especially for medicine and electrical engineering

3. Non-STEM disciplines (i.e. Environmental sciences and humanities) are more favorable towards various library website and support services

*Total respondents = 162. Survey conducted May 18 – 29, 2015
Analysis: User Feedback

1. “Colleagues/collaborator” recommendation and “online video & tutorial” are almost equal in impact for all users

2. New users are most affected by various social media and direct communications (i.e. newsletter, department announcement) “

3. “Library website” and “Library training sessions” are then secondarily effective for all users

*Total respondents = 162. Survey conducted May 18 – 29, 2015
Conclusion

**Objective #1**: To understand the user adoption pattern of a reference management tool such as Mendeley

- User adoption and user ‘activeness’ is heavily influenced by seasonality
- Structured in-person training appear to have the most immediate impact on adoption numbers.
- Other promotional activities (such as Research Day) seem to have a multi-day effect.

**Objective #2**: To understand differences between discipline and academic statuses and how they are affected by different learning and support resources.

- “Colleagues/ collaborator” recommendation is the highest influencer in all academic statuses as well as disciplines
- Professors are the most affected by “Online video & tutorial” as well “newsletters and direct emails”
- Non-STEM disciplines (i.e. Environmental sciences and humanities) are more favorable towards various library website and support services
- New users are most affected by various social media and direct communications (i.e. newsletter, department announcement)

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