New and/or Unique Data - capture practices on a limited budget

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Overview:

I. Native ASL Communicators Survey

Livescribe™ Smartpen data capture:
II. Bengali Survey Collection
III. Smartpen Proof-of-Concept Survey
IV. Qualitative interviews with Smartpens
“In preparing for battle I have always found that plans are useless but planning is indispensable.”

Dwight D. Eisenhower

Native ASL Communicators Survey

Estimated 2 Million Deaf Americans in 1999 - the 2nd largest non-English primary language group after Spanish.

- Utilized Community Based Participatory Research
ASL is a non-linear, completely visual language.

This is what part of a single question response looks like:
## 2014 Best Digital Pen Reviews and Comparisons

<table>
<thead>
<tr>
<th>Rank</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
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<th>#9</th>
<th>#10</th>
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</thead>
<tbody>
<tr>
<td>10-9</td>
<td>Sky Wifi Smartpen</td>
<td>Echo Smartpen</td>
<td>Mobile Notes Pro</td>
<td>Staedtler Pen 99002</td>
<td>Wacom Inking</td>
<td>IRISNotes 2 Executive</td>
<td>IRISNotes 1 for Smartphones</td>
<td>LogiPen Notes</td>
<td>Captura for OneNote</td>
<td>DigiMemo L2</td>
</tr>
</tbody>
</table>

### Reviewer Comments

- Sky Wifi Smartpen
- Echo Smartpen
- Mobile Notes Pro
- Staedtler Pen 99002
- Wacom Inking
- IRISNotes 2 Executive
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### Lowest Price

<table>
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<th>Rank</th>
<th>#1</th>
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</table>

### Ratings

- **Overall Rating**
  - #1: 9.63
  - #2: 8.90
  - #3: 8.88
  - #4: 8.60
  - #5: 8.45
  - #6: 8.23
  - #7: 8.07
  - #8: 7.95
  - #9: 7.75
  - #10: 6.75

- **Performance**
- **Feature Set**
- **Ease of Use**
- **Help & Support**
Leading Paper-to-data input options:

#9 Capturx® digital Pen
  - Microsoft integration with excel
    - extremely robust (military grade)
    - more expensive with less memory
  - Windows™ Only
  - focused on enterprise data entry
  - requires special dot paper
Leading Paper-to-data input options:

#7 IRISNotes 2 Executive
  - Designed for business forms data-entry
    - The data component is expensive
    - more expensive
    - use any paper ... but keep out of the way of the sensor!
IRISNotes 2 Executive

IRISNotes Express helps save time and effort by transforming your handwritten notes and sketches into editable text on your computer.

It's truly ingenious. You write, it types!
About the Livescribe™ smartpen

Long battery life

Excellent audio quality - with binaural recording

May store hours of content

Redundant backup

Includes software
About the Livescribe™ smartpen
Smartpen dot paper: controls

1. I didn't find them useful
2. Strategies to get started
3. Instructional videos/slideshows
4. How to find articles
5. How to find books

Other: ____________________________

Printable Unlined Notepad 1

record  pause  stop
jump
bookmark
0%  jump to position  100%  playback speed

[Diagram with controls: record, pause, stop, jump, bookmark, playback speed]
Our smartpen to data process:

Simple Survey

1. What is your class year?
   
<table>
<thead>
<tr>
<th>Year</th>
<th>Class Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>(17)</td>
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<tr>
<td>2016</td>
<td>(16)</td>
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<td>2015</td>
<td>(15)</td>
</tr>
<tr>
<td>2014</td>
<td>(14)</td>
</tr>
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</table>

   Answer: 20   Other: 

2. Have you done more quantitative or qualitative research or about equal?
   
   - Quantitative (N)
   - Qualitative (L)
   - Equal (=)
   - No Research (X)

   Answer: 

3. With what writing software are you most comfortable?
   
   - W. Word
   - G. Google Docs
   - P. Pages
   - O. OpenOff.

   Answer: 

4. Have you used any of the following reference management software? [read answers]

   - Mendeley
     Comfort: 
   - Zotero
     Comfort: 
   - EndNote
     Comfort: 
   - Other: [include word, google doc, etc.]

   Comfort: 

5. Have you used any library research guides?

   [for example: a guide to show you how to search for books or using Endnote.] [if no, X & you’re done]

5a. How did you hear about it? [read answers if prompted]
Our smartpen to data process:

Fit to Dot-paper
Our smartpen to data process:

Imported to Livescribe Desktop
Our smartpen to data process:

OCR-ed via MySript for Livescribe
Some Tips specific to smartpen-to-data processing:

- It’s better have boxes than lines to constrain writing.
- No 2 questions should have the same possible answers.
- Run the questionnaires through a number of iterations to discover the probable mis-identified characters (e.g. $S=5$, $I=1$, $8=B$…)
- All surveyors need to practice, assign each pen to a specific computer
- come up with a scheme to track which pen is using which paper series
Bengali Survey Collection

Smartpen chosen for:
- Affordability
- Redundant backup
- Low power consumption
- Audio with original data capture
House Location Map
Bara Baju Chhatihati, Kalihat, Tangail

Legend
- House location
- Local market
- Major road
- Minor road
- Mouza boundary
Bengali Survey Collection

Encountered Problems:
- corruption (fired 2 surveyers)
- the audio & pen capture occasionally didn’t synch
- the dot-paper-forms required careful monitoring
- the pens needed to be charged nightly
- overconfidence with precision in data entry
Bengali Survey Collection

Smartpen Pros
- Ease of use
- Checking for data accuracy
- Mitigated moral hazard (cheating)
- Allowed for robust surveyor norming process