Research Design

Variables

- Independent
  - Anonymity of input vs. identity on public display
  - Accountability vs. no accountability message on private display
- Dependent: Collaborative effectiveness was measured in terms of participants’ contribution and their evaluation of their collaboration experience.
  - The amount of ideas generated.
  - Self-reported collaboration experience
    - Found the group work a good collaborative experience
    - Motivated to do best work
    - More confident in expressing ideas
    - Contributed more personally because of the collaboration format
    - Participated actively
    - More involved
    - Achieved more as a group because of the collaboration format
    - Group work was fun
- Manipulation
  - 2 x 2 between subjects factorial design

<table>
<thead>
<tr>
<th>Accountability</th>
<th>Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymity of input and accountability message</td>
<td>Identity and accountability message</td>
</tr>
<tr>
<td>Anonymity of input and no accountability message</td>
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</tbody>
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- Can be within-subjects design, too.
  - Strength - statistical power increases and the probability of beta error decreases
  - Weakness – carryover effect: either fatigue or practice effect

Task

- Visiting the ldt website: [http://ldt.stanford.edu/](http://ldt.stanford.edu/)
- Discuss and critique the website in terms of strength and weakness
- Based on their critique, brainstorm what the future ldt website should look like in terms of content, features, functions and organization (architecture)
- Generate a final report including the critique and new design (expectation) of the website
**Rationales**

- Group work or collaboration has potential gains and losses.
- Increasing process gains and reducing process losses can facilitate group interactions and improve group performance.
- Specific procedures (interface) can be built into computer-based collaboration process to achieve this purpose.
- We can manipulate these procedures to see their effects.

<table>
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<tr>
<th>Group Process Gains</th>
<th>Group Process Losses</th>
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<tbody>
<tr>
<td>A group as a whole generates more information and alternatives compared to the average group member</td>
<td>Member participation in the group is fragmented (i.e., group members should take turns in speaking/controlling the public display)</td>
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<td>Groups are more effective and objective in evaluation and error detection tasks</td>
<td>One or a few individual members may dominate group discussions and monopolize the group’s time (control)</td>
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<td>Working in a group may motivate the individual member to perform better</td>
<td>Fear of negative evaluation (evaluation apprehension) causes members to withdraw and avoid participating in the group discussions</td>
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<td>Interactions among the group members lead to synergies</td>
<td>Higher volumes of information generated during the group process creates a condition of information overload for individual member</td>
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**Hypothesis**

Anonymity of input on public display and accountability message on private display enhances the effectiveness of collaboration (defined in terms of ideas generated and self-reported collaboration experience) by increasing group process gains and decreasing group process losses.

- Anonymity of input can decrease or eliminate evaluation apprehension (a process gain) leading to an increase in member participation and amount of information generated by the group (a process gain)
- Showing message “everyone has to make contribution” on each private display can increase individual accountability and thus member participation and amount of information generated by the group (process gain)