Considerate Supervisor for Audio-only Teleconference Call
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**Teleconference Issues**

<table>
<thead>
<tr>
<th>Satisfactory Rating</th>
<th>Ability to Share Content</th>
<th>Social Presence, Engaging</th>
<th>Ability to Produce Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to Face Meeting</td>
<td>98.2%</td>
<td>98.2%</td>
<td>98.2%</td>
</tr>
<tr>
<td>Teleconference (audio only)</td>
<td>53.7%</td>
<td>46.3%</td>
<td>75.9%</td>
</tr>
<tr>
<td>Web Conference</td>
<td>98.3%</td>
<td>63.0%</td>
<td>94.2%</td>
</tr>
<tr>
<td>Desktop Video</td>
<td>92.5%</td>
<td>57.5%</td>
<td>82.1%</td>
</tr>
<tr>
<td>Virtual 3D Space Meeting</td>
<td>84.2%</td>
<td>86.0%</td>
<td>78.2%</td>
</tr>
</tbody>
</table>

• Teams with constructive interaction styles achieve better performance (e.g., solution quality, solution acceptance, cohesion) than teams with passive interaction styles [2].

**Considerate Supervisor**

A considerate meeting supervisor to mediate the small-group interaction.

• **Feedback** approaches that:
  • discourage overly dominant activity
  • illuminate problems associated with background noise and loudness of speaker

• **Feed-forward** approaches that:
  • intonate entry and exit
  • annotate participant presence
  • pitch shift for overlap resolution

**Approach**

• Tools: CLAM, JACK, Festival, RoR

• Process each user’s audio stream to discern social dynamics of a conversation by computing non-verbal behavioral audio cues such as:
  • Total Speaking Length
  • Total Successful Interruptions
  • Total Unsuccessful Interruptions
  • Overlap length

**Results**

• Collaborative Hangman experiment:
  • 12 groups of 3 people, 5 minutes each

• Significant dominance reduction with Considerate Supervisor On (Test Condition).

Variance in dominance levels of all participants across all groups one minute into the meeting and at the end of the meeting.

Example of Dominance (%) vs. Number of Utterances for one group: When the CS On, the Speaker 3 becomes less dominant and Speakers 1 and 2 become less dormant. Also, they contribute more equally, i.e., the number of utterances from each is around the same.