Attendance numbers at SI sessions – how do they affect learning conditions?

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Background

• Recommended number of participants at SI-meetings ~5-15 in Europe

• Is this range reasonable with respect to optimal learning conditions?

• What are the opinions of SI leaders and participants?
  ✓ When does the number of attendees become too small or too large for fruitful sessions?
  ✓ And why is that so?
Case study at Lund University

- Online survey handed out to SI-leaders and participants
- Besides background information – these were the main questions:
  - What do you think is the minimum number of participants required for a fruitful SI-session?
  - Which problems arise when the number of attendees fall below this lower limit?
  - What do you think is the maximum number of participants that can attend and still allow for a fruitful SI-session?
  - Which problems arise when the number of attendees exceeds this higher limit?
  - What do you think is the optimal number of participants that is required for an SI-meeting from an optimal learning condition perspective?
Characteristics of a fruitful SI-meeting

- Different views should be expressed
- The SI-leader has a good overview of what is going on in the SI-session
- The participants are active in moving the session forward
- The attendees ask questions and explain for each other
- Everybody are active and improves their understanding of the course subject
- There is synergy in the groups, participants enhance each other
- There is a good and positive atmosphere
- The participants are satisfied with the session and want to come back
What are your opinions?

Take ~10 minutes to discuss these questions in small groups:

✓ When does the number of attendees at SI become too small or too large for fruitful sessions?
✓ And why is that so?
✓ Is there an optimal number of participants at an SI-session?

If you are quick and need more topics to discuss:

• What measures can one take to ensure that the number of attendees do not become too small or large?
• A common phenomenon is that the number of SI attendees in the beginning of a course is larger than later on. I.e., new SI leaders are likely to have the most challenging conditions initially. How can one overcome that?
Results from a literature review on attendee numbers in SI-sessions

• Attendance numbers in sessions seldom reported in research papers on SI

• No studies (of the ~150 we reviewed) considers or reflects on the attendance numbers impact on learning conditions in SI
## Results from the case study at Lund University

<table>
<thead>
<tr>
<th></th>
<th>No of answers</th>
<th>Suggested minimum viable number of attendees at SI</th>
<th>Suggested maximum viable number of attendees at SI</th>
<th>Suggested optimal number of attendees at SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-leaders</td>
<td>44</td>
<td>4.1 (±1.6)</td>
<td>16.2 (±6.5)</td>
<td>10.6 (±3.4)</td>
</tr>
<tr>
<td>SI-attendees</td>
<td>176</td>
<td>5.2 (±2.5)</td>
<td>18.9 (±6.9)</td>
<td>11.8 (±3.9)</td>
</tr>
</tbody>
</table>
## Results from the case study at Lund University

<table>
<thead>
<tr>
<th>Smallest experienced number of attendees</th>
<th>No of answers</th>
<th>Suggested minimum viable number of attendees at SI</th>
<th>Suggested maximum viable number of attendees at SI</th>
<th>Suggested optimal number of attendees at SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 attendees</td>
<td>59</td>
<td>4.5 (±2.1)</td>
<td>18.3 (±8.7)</td>
<td>10.9 (±4.0)</td>
</tr>
<tr>
<td>6-8 attendees</td>
<td>57</td>
<td>5.0 (±2.3)</td>
<td>19.2 (±5.0)</td>
<td>12.1 (±3.5)</td>
</tr>
<tr>
<td>9-30 attendees</td>
<td>59</td>
<td>6.2 (±2.8)</td>
<td>19.6 (±6.3)</td>
<td>12.6 (±3.7)</td>
</tr>
</tbody>
</table>

Similar results were obtained when dividing attendees answers with respect to highest experienced number of attendees, different subject areas
What problems arise when the number of attendees falls below the minimum that is required for a fruitful SI-session?

<table>
<thead>
<tr>
<th>Problem</th>
<th>SI-attendees</th>
<th>SI-leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to discuss (too few points of view/too little combined knowledge)</td>
<td>82%</td>
<td>88%</td>
</tr>
<tr>
<td>Too few groups (bad dynamics, difficult with presentations for each other)</td>
<td>4%</td>
<td>14%</td>
</tr>
<tr>
<td>SI-leader takes up too much room</td>
<td>0%</td>
<td>31%</td>
</tr>
</tbody>
</table>
Results from the case study at Lund University

Example of comments on problems that arise when the number of attendees falls **below the minimum** that is required for a fruitful SI-session

**Leaders**
- A critical mass is needed with respect to creativity and ideas in the group as well as people with answers. Too small groups easily become passive or dependent on me as a leader.
- There is no flow in the discussions and the thoughts that are brought up are not challenged, i.e. little depth in the learning experience

**Participants**
- There may not be enough opinions and ideas leading to unfruitful discussions.
- There may be a lack in combined knowledge and all participants may feel uncomfortable taking the role of a ‘teacher’.
Results from the case study at Lund University

What problems arise when the number of attendees exceeds the maximum for a fruitful SI-session?

<table>
<thead>
<tr>
<th>Problem</th>
<th>SI-attendees</th>
<th>SI-leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too chaotic/noisy</td>
<td>45%</td>
<td>26%</td>
</tr>
<tr>
<td>Difficult as an attendee to be seen/heard/listened to/participate</td>
<td>35%</td>
<td>43%</td>
</tr>
<tr>
<td>Difficult for the SI-leader to structure and have an overview of the session</td>
<td>9%</td>
<td>48%</td>
</tr>
</tbody>
</table>
Results from the case study at Lund University

Example of comments on problems that arise when the number of attendees exceeds the maximum that is required for a fruitful SI-session

Leaders

• It is hard to get everybody to participate and it is easy for participants to ”zoom out”/work alone or simply start playing with the mobile phone instead.

• It is hard to get an overview of what is happening. Not everybody can be heard due to lack of time. Someone may easily end up on the outside/sitting quiet.

Participants

• There are too many to be heard in too short time. You become one of many when the purpose is partly to get to know your SI-leader and classmates.

• Too noisy in the classroom leading to less focus. Takes longer time to organize groups / change of activities, which becomes time inefficient.
Results from a case study in upper secondary schools

<table>
<thead>
<tr>
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<th>Suggested maximum viable number of attendees at SI</th>
<th>Suggested optimal number of attendees at SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-leaders</td>
<td>20</td>
<td>5.0 (±1.6)</td>
<td>16 (±3.4)</td>
<td>12 (±2.9)</td>
</tr>
<tr>
<td>SI-attendees</td>
<td>47</td>
<td>6.3 (±3.0)</td>
<td>16 (±4.9)</td>
<td>11 (±3.7)</td>
</tr>
</tbody>
</table>
Conclusions from the case study at Lund University

• The number of attendees at SI sessions is very seldom reported
• The learning conditions may, however, be impacted quite a lot by this factor
• In a case study, the number of attendees for optimal learning conditions was estimated to 11-12 by leaders and student participants
• These groups also estimated that if the number of attendees is below 4-5 or above 16-19 students the learning conditions at the SI session is likely to suffer
• In the former case this is due to too little combined knowledge, too few points of view and a risk of the SI-leader taking up too much room.
• In the latter case, attendees are likely to find the conditions noisy and feel that they are not being seen/heard/listened to, while the SI-leader may have troubles with overview and in obtaining a good structure in the session
• How general are these results? They may be dependent on the education context, why case studies from other education contexts are needed and welcomed.
Thank you for participating!