The Multi-Dimensionality of Group Cohesion: A Social Network Analysis of NOLS Courses

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Background

Outdoor adventure education (OAE) provides a unique and dynamic context for small groups. Whether a group functions efficiently, both socially and technically, can be tied to the structure of the small group. Considering the development of relationships and community are some of the main drivers of student participation on OAE courses (Sammet, 2010; Sharpe, 2005), an outcome that is important to the well functioning of small groups is cohesion (Forsyth, 2010).

The setting and activities of OAE programs have the potential to develop a stronger sense of cohesion in groups, but most studies have only looked at cohesion as a unidimensional construct (social cohesion) (e.g. Breunig et al., 2008; Glass & Benshoff, 2002) and at a single point in time. This study investigates the social and task dimensions of cohesion because these are the two primary functions of a small group. Distinguishing between these two types of cohesion is extremely relevant for OAE programs and can offer a better understanding of why groups may be cohesive and how we can develop cohesive groups.

Differences among individuals in a group have been suggested to have an effect on cohesion. Wilkinson and Fung (2002) have shown that greater interaction among ethnically diverse students occur when status and relative influence are homogenous. Others have suggested that groups with individuals that have greater similarities in background would lead to greater cohesion (Lott & Lott, 1965). This would suggest that varying the composition of diverse students
would result in different group structures on the social and task dimensions. Therefore, the purpose of this study is to investigate the social and task dimensions of cohesion in three different compositions of students receiving scholarship on courses from the National Outdoor Leadership School (NOLS) over time.

**Methods**

Data were collected from six 30-day NOLS courses in the summer of 2012, consisting of three different compositions of students receiving scholarship. Traditionally, these students come from a low socioeconomic background and may have less outdoor experience than students who do not receive scholarships. Two courses consisted of two students receiving scholarships, two courses consisted of six students receiving scholarships, and two courses consisted of all students receiving scholarships (all courses consisted of 12 students). These data were collected approximately at the 10, 20, and 30-day (end) points of the course.

A mixed method approach was used to identify the social and task cohesion group structure and the reasons why students were drawn toward each other. Social network analysis (SNA) was the primary method used to understand group cohesion for the social and task dimensions. This technique provides a statistical and graphical representation of the relationships among individuals in a group through the use of graph theory (Wasserman & Faust, 1994).

We conceptualize cohesion as the interpersonal attraction among members of a group (Lott & Lott, 1965), thus the use of SNA provides a useful link to understand how students are connected to one another. The use of a group level statistic known as “in-closeness” was used to quantify the level of cohesion for each group. Group level “in-closeness” refers to the overall average distance between actors in the network. Thus, groups with a higher “in-closeness” are more easily accessible to all members of the group, suggesting higher levels of cohesion.

The SNA data were collected by asking students to choose three members within their group they would prefer to be with based on the following two scenarios that represented the social and task dimensions of the group:

“For your small group is doing a peak ascent without instructors. The off-trail travel is difficult and it has been raining all day. Everyone will need to use their skills to make sure the group makes it to camp safely. Name up to three students you would want in your group.” (Social Dimension)

“You are preparing to do an easy day of travel without instructors. The route is only a few miles on-trail and the weather will be excellent. You will be camping near a lake and should have plenty of time to hang out and enjoy each other's company. Name up to three students you would want in your group.” (Task Dimension)

Graphical representations of the group structure and “in-closeness” statistics were generated for each administration on both the social and task dimensions.

To understand why students were attracted to one another an open ended questions was asked that stated:

“What is it about these people that draws you to them?”

The second method of analysis was the use of constant comparison (Lindlof & Taylor, 2002) with the qualitative data that were collected through an open-ended question. Each stu-
student’s response was used as the unit of analysis to generate the most prominent theme for each group on the social and task dimensions of cohesion throughout each administration. The themes from each response were enumerated and one theme represented each administration for the group.

Results

The purpose of this study was to investigate the social and task dimensions of group cohesion on three different compositions of students receiving scholarship over time. As we were missing data for three of the 18 administrations, the results will be presented as a case study of one course for each composition.

The results for each composition on the three administrations for the social and task dimensions of cohesion can be seen in tables one and two. The numerical scores represent in-closeness with the qualitative theme of attraction below.

Figure one shows an example of a sociogram, the graphical representation produced by SNA. Figure one (a) shows the least cohesive group structure (Social T1, .35) and figure one (b) the most cohesive group structure (Task T3, 1.21), both from Composition 2.

Table 1

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.65</td>
<td>1.04</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>Easy to talk with</td>
<td>Fun to be with</td>
<td>Connections with others</td>
</tr>
<tr>
<td>2</td>
<td>.35</td>
<td>.37</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>Fun to be with</td>
<td>Easy to relate with</td>
<td>Experienced best times with</td>
</tr>
<tr>
<td>3</td>
<td>.91</td>
<td>.69</td>
<td>.63</td>
</tr>
<tr>
<td></td>
<td>Easy to talk with</td>
<td>Easy to be self</td>
<td>Fun personalities</td>
</tr>
</tbody>
</table>

Table 2

<table>
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<tr>
<th>Concentration</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.69</td>
<td>1.17</td>
<td>.64</td>
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<td></td>
<td>Technical Competence</td>
<td>Leadership Attributes</td>
<td>Technical Competence</td>
</tr>
<tr>
<td>2</td>
<td>.94</td>
<td>.93</td>
<td>1.21</td>
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<tr>
<td></td>
<td>Teamwork</td>
<td>Teamwork</td>
<td>Leadership Attributes</td>
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<td>3</td>
<td>.87</td>
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<tr>
<td></td>
<td>Teamwork</td>
<td>Leadership Attributes</td>
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Discussion

The findings from this case study suggest that differences (to the extent that we use socio-economic status to represent these differences) within the group may affect how well the group
coheres socially. For the social dimension of group cohesion, the group with all students receiving scholarship had the overall highest average of in-closeness scores. The least cohesive group across the three administrations was concentration 2, and showed fairly consistent scores. These results follow what Lott and Lott (1965) suggest, that the greater background similarity a group holds, the greater its cohesion. This result provides interesting questions in regards to how wilderness programs may best serve students from diverse populations. The qualitative data provides an understanding of how student’s attraction changed for one another over time. Compositions 1 and 3 identified the ease of talking to others as the most important attribute for administration 1. These two groups had the highest cohesion at this point in time, suggesting that the ability for students to feel comfortable talking with one another is critical in developing social cohesion. Previous research has shown that the development of relationships is critical for student participation (Sammet, 2005).

The findings from the results of task cohesion show Composition 2 as the most cohesive group of the three. Composition 1 again had a spike during administration 2, followed by the lowest overall cohesion score, whereas Composition 3 was relatively consistent across the three administrations. The qualitative data show that the two lowest scores were represented by people feeling “technical skills” were what attracted them to others. This may suggest that technical skills, while they are important, may not necessarily be the driving force behind task cohesion. The main qualitative category that was associated with an increase of in-closeness scores was “leadership attributes,” which consisted of qualities such as “trust,” “decision-making,” and “risk management.” Increases are most evident in Compositions 1 and 2, but can also be seen in Composition 3. The teaching of meta-skills, such as leadership, should be considered just as important if not more important than teaching technical skills for outdoor programs, especially if they seek to increase levels of task cohesion in their groups.

Figure 1

Social network of least cohesive (.35)(a) and most cohesive (1.21)(b) group structures (both from Composition 2)

a) b)

*Triangles represent students not receiving scholarship; Circles represent students receiving scholarship; Orange represent females; Blue represents males
References


