Comparison of Text and Graphical Sociometric Questionnaires

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Peer nomination and peer rating which are used in standard text sociometric questionnaires can be also used in graphical form of sociometric questionnaires. Children may consider the graphical questionnaire more interesting and more playful. We created the graphical sociometric questionnaire which is based on peer rating. We aimed to verify its validity by comparing it with text sociometric questionnaire. Our sample consisted of 125 sixth and seventh graders from three elementary schools in Slovakia. The results indicate that graphical sociometric questionnaire is a valid assessment method for measuring social status of group members. We suggest that graphical questionnaire is more sensitive in discrimination of children’s social status. But graphical questionnaire did not show exactly status of neglected children. Neglected children are better identified by text sociometric questionnaire.

Graphical sociometric questionnaire. Text sociometric questionnaire. Comparison.

Introduction
Sociometry is a popular assessment method which helps to uncover relationships and social status in different groups (in school environment, organizations etc.). “Sociometry is a method for discovering, describing, and evaluating social status, structure, and development through measuring the extent of acceptance or rejection in social groups” (Bronfenbrenner, 1943, p. 364). Sociometry measures interpersonal and intergroup relationships (Loomis, Pepinsky, 1948). It studies positive and negative affective relations, such as liking/disliking (Wasserman, Faust, 1994).

There are various sociometric techniques. One group of them are sociometric tests, which measure phenomena like informal friendship constellations, social participation, social distance and group cohesiveness (Miller, Salkind, 1991). In a test like that each individual has to select one or more individuals from the group on the basis of a chosen criterion. Outcome of sociometric tests allows us to identify the social status of each member of the group. Those who receive the largest number of choices are called leaders, stars, accepted. Those who receive few or no choices are called neglected/isolated (Byrd, 1951). Rejected are those who receive a lot of negative choices. Average individuals have positive as well as negative choices and controversial are those who have high rate of positive and also negative choices. Sociometric methods can be based on peer ratings or peer nominations. The task of an individual in peer nomination sociometry is to choose one or more members of group on the basis of defined criterion. Number of nominated can be limited or unlimited. On the other hand, in peer rating an individual ranks each group member on a scale of like-dislike. It is possible to combine the method of nomination and peer rating into one sociometric test.
The main goal of this study is to compare text and graphical sociometric questionnaire. Text sociometric questionnaire uses peer nomination method whereas graphical questionnaire uses peer-rating. Although some researchers have focused on comparing different types of sociometric tests which use methods mentioned above (e.g. Terry, Coie, 1991), but as far as we are informed there is no research on comparison between graphical and text sociometric questionnaires.

In this study we aim to compare whether these two types of questionnaires are equivalent in regard to identifying social status of participant in a group.

Method

Participants
Our sample consisted of 125 sixth and seventh graders from three elementary schools in Košice and Komárno, Slovakia.

Instrument
For the purpose of this study we used text and graphical sociomteric questionnaire (Dobeš, Fedáková, 2010).

Text sociometric questionnaire consists of two questions (see Appendix A). Students were asked to nominate optional number of their classmates according to the criterions. The instruction was: “In this questionnaire, in each question write down some names of your classmates. Always write their name and first letter of their last name. Do not write generally (e.g. “everybody”, “all boys”, “all girls”, “I do not know” etc.), write only those who fit to the questions.”

Graphical sociometric questionnaire consists of six concentric ellipses (see Appendix B). Into the first ellipse (or circle), child is asked to write down his/her name and the first letter of his/her last name. Other ellipses are made for child to write down his/her classmates to other ellipses according to their perceived closeness. Each child is given the list of class members. The instruction was: “In front of you is paper with circles. You are in the middle circle. Please, write down your name and the first letter of your last name into this circle. You have also a list of your classmates at hand. Write names and the first letter of last name of all your classmates in a way that to the circle closest to yours write the classmates that you get along with best. Into other circles write down classmates you do not get along with so well or at all. Check if you mentioned all of your classmates.”

Procedure
Children were given the text and then graphical sociometric questionnaire. When administrating the text questionnaire they were asked to write down the unlimited number of their classmates (their names and the first letter of surname) whom they felt best fit the description given in the question. In graphical questionnaire children were asked to write down the names of their classmates according to the instruction. Before children started working on graphical questionnaire, they received the complete list of their classmates. The text questionnaire consisted of two questions: 1. “With what boys or girls from your class are you friends? Write down their first names and first letter of their surname:” 2. “With what boys or girls from your class are you not friends? Write down their first names and first letter of their surname:”

In the text questionnaire each child nominated optional number of classmates. Each child got certain number of nominations. Number of nominations for each child was summed up and divided by the number of classmates in the group. We obtained average score with range from 0 to 1. This procedure was same in the first and in the second question. Higher average score in the first question indicates that child is well-accepted or popular. Higher average score in
the second question indicates that child is rejected. If child is not mentioned neither in the first nor in the second question it is likely that he/she is neglected.

In the graphical questionnaire number one was assigned to children, who were in the first ellipse, number two to children in second ellipse, number three to children in third ellipse, number four to children in fourth ellipse and number five to children in fifth ellipse. For each child these values were summed up and divided by the number of classmates, from who he/she obtained nomination. We obtained average score with range from 1 to 5. The average score close to one indicates that child is more popular, high score indicates unpopularity.

**Results**

Correlations were used to indicate questionnaires’ validity (see Table 1 in Appendix C). Significant correlations occurred between question number one and graphical questionnaire \((r=-0.80, p<0.05)\) and question number two and graphical questionnaire \((r=0.77, p<0.05)\). Correlations indicate that both questionnaires are equivalent when evaluating child’s high or low popularity in class.

Our next goal was to compare agreement between two mentioned types of questionnaires in the term of positive reciprocal choices. In the text questionnaire we looked at number of positive reciprocal choices in the class, which means that we measured how many times two children labeled each other as friends. In the graphical questionnaire we measured the same. We considered reciprocal positive choice when both children mentioned each other in the first ellipse.

Table 2 (see Appendix C) shows summary of outcomes of the comparison. We can see that in average 85% of reciprocal positive choices from the graphical questionnaire occurred also in the text questionnaire. Vice versa this number was lower (53%), because the graphical questionnaire is more sensitive in discrimination and also children could mention friends not only in the first ellipse, but also in the second ellipse.

Next we wanted to find out to what extent graphical questionnaire can identify a neglected child. Neglected children were those who had low number of choices in both, first and second question in the text questionnaire. We specified that neglected children in the text questionnaire are those, who obtained in the first and second question average score from 0 to 0,2. Number of those children who matched this condition was 19 from 125. We chose these 19 children and found out their average position in the graphical questionnaire. Table 3 (see Appendix C) shows the result.

Looking at results from Table 3, we can not tell from graphical questionnaire alone whether a child is neglected or not. All the children are mentioned in graphical questionnaire and their score is not different from average score of other children.

**Discussion**

The goal of this study was to compare graphical and text sociometric questionnaire, in regard to identifying a social status of participant in a group. Our results indicate that there is significant equivalence between both questionnaires.

We suggest that graphical questionnaire may be more interesting and amusing for children. Graphical questionnaire is more sensitive than text questionnaire in discrimination of popular and rejected children. But on the other side, study showed that we cannot with certainty identify neglected children. Text questionnaire rather than graphical questionnaire identifies better children who are neglected. In the text questionnaire children sometimes have tendency to write not the names of classmates but words as “all”, “nobody”, “all girls”, “all boys”, “I do not know” etc. The administrators should be aware of these statements because they complicate the work with data.
In answering the questionnaires children were asked to fill in their first name and first letter of their surname. Therefore the questionnaires were not anonymous. We did not hear complaints from children resulting from this fact, neither we noticed any tendency towards skewing of the answers in any direction. However, users of the questionnaires should be aware of possible issues related with non-anonymity of sociometric questionnaires.

In few cases, when a child noticed that his/her friend did not assign him/her a good rating in a questionnaire, they changed their rating of that friend for worse in reciprocity.

When filling in the graphic form, children were given a list of all their classmates in order not to forget any classmate. This list was not always available when filling in the text version. However, in text version we asked them to provide only classmates who come to mind as friends (not friends) at a first place and therefore we did not consider availability of a complete list of classmates necessary.

**Porovnanie textovej a grafickej formy sociometrie**

Niekoľko štúdií sa venuje porovnaniu peer ratingu a peer nominácie, ale nenašli sme také, ktoré by sa zaoberali grafickou sociometriou. V našej štúdii sme použili grafickú formu peer ratingu, pretože si myslíme, že grafická forma je pre deti zaujímavejšia a hravejšia. Sociometria by mala ukázať postavenie dieťaťa v triede čo najverejšie skutočnosti. Čím lepšie poznáme postavenie dieťaťa v triede, tým vieme vytvoriť a používať efektívnejšiu intervenciu.

**Appendix A (Source: Dobeš, Fedáková, 2010)**

First name and first letter of surname:

With what boys or girls from your class are you friends?

Write down their first names and first letter of their surname:

With what boys or girls from your class are you not friends?

Write down their first names and first letter of their surname:

(Original questionnaire in Slovak language is available upon request).
Appendix B (Source: Dobeš, Fedáková, 2010)
Appendix C

Table 1: Correlations between text (TSQ) and graphical sociometric questionnaire (GSQ)

<table>
<thead>
<tr>
<th>GSQ</th>
<th>First question of TSQ</th>
<th>Second question of TSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.80</td>
<td>0.77</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Number of positive reciprocal choices in text and graphical questionnaire, number of identical positive reciprocal choices in both questionnaire and percentage of positive reciprocal choices in text and graphical questionnaire.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of positive reciprocal choices in text questionnaire</th>
<th>Number of positive reciprocal choices in graphical questionnaire</th>
<th>Number of identical positive reciprocal choices in both questionnaires</th>
<th>Percentage of positive reciprocal choices in text questionnaire</th>
<th>Percentage of positive reciprocal choices in graphical questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38</td>
<td>22</td>
<td>19</td>
<td>50,00</td>
<td>86,36</td>
</tr>
<tr>
<td>2</td>
<td>33</td>
<td>25</td>
<td>20</td>
<td>60,60</td>
<td>80,00</td>
</tr>
<tr>
<td>3</td>
<td>45</td>
<td>35</td>
<td>29</td>
<td>64,44</td>
<td>82,85</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>22</td>
<td>21</td>
<td>52,50</td>
<td>95,45</td>
</tr>
<tr>
<td>5</td>
<td>27</td>
<td>18</td>
<td>14</td>
<td>51,85</td>
<td>77,77</td>
</tr>
<tr>
<td>6</td>
<td>53</td>
<td>26</td>
<td>24</td>
<td>45,28</td>
<td>92,30</td>
</tr>
<tr>
<td>Mean</td>
<td>39,3</td>
<td>24,6</td>
<td>21,1</td>
<td>53,68</td>
<td>85,77</td>
</tr>
</tbody>
</table>

Table 3: Finding neglected children in graphical sociometric questionnaire

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>2,67</td>
<td>1,72</td>
<td>4,59</td>
<td>0,575</td>
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<tr>
<td>19</td>
<td>2,86</td>
<td>2,36</td>
<td>3,50</td>
<td>0,257</td>
</tr>
</tbody>
</table>

References

Recenzent: Prof. PhDr. Jozef Džuka, CSc.