

Social Network Survey of Peer Relationship between Urban and Rural Children

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Abstract: In the past, peer nomination method was mainly used to measure children's peer relationship. Each child in the class was divided into five different grades, from popular to unpopular. This research studies peer relationship from the perspective of social network, and conducts social network analysis (SNA) on the basis of peer nomination. First, the data of children's nomination and nominees are obtained by peer nomination method, then the matrix is made by Excel, and finally the social network analysis software UCINET is introduced for analysis. This method can analyze the centrality and density of children's peer relationship from the perspective of individual and group, and express each child's peer relationship in the form of the graph. In this way, we can further explore the characteristics, structure and influencing factors of children's peer relationship, and put forward feasible suggestions to promote the development of children's peer relationship.

Keywords: children; peer relationship; social network analysis

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1 Description of problem

Interpersonal communication is a lifelong process. In the early stage of life, children's interpersonal relationship is more sensitive and important. Peer relationship, as a key link of children's interpersonal relationship, affects their whole life. Do you remember the happiest times of childhood you spent with your little friends? In the process of children's growth, a complex class peer relationship is gradually formed.

These experiences will deeply affect their future social adaptation, physical and mental development, learning behavior acquirement and so on. Each child's peer relationship is different, and there are both similarities and large differences between individuals. The existing research mainly uses peer nomination method to analyze the hierarchical relationship of individuals in the group, while the social network research emerged in the 1970s provides more scientific and technical support for the analysis of such relationship data. UCINET, as a popular SNA analysis software, is developed by a group of network analysts at the University of California, Irvine^[1]. This software has strong practicability and is widely used at home and abroad, so this research chooses this software.

2 Concept definition

2.1 Peer relationship

Peer relationship is a relatively stable result of children's peer communication. Some studies think that peer relationship can be divided into two types: friendship and peer group relationship. The former is a kind of interactive, long-lasting and stable two-way relationship between two individuals^[2]. Laura (2009) believes that children's friendship is a special relationship^[3] marked by attachment and common interest. The latter includes the relationship between peer individuals and groups, and the relationship between small peer groups. The peer relationship studied in this paper includes the above forms.

Social network analysis (hereinafter referred to as SNA) is not only a research method, but also a new point of view to study social structure. Some scholars call it structural analysis, while others call it network analysis. The core concept of SNA is to study social

phenomena by revealing the basic social structure, raise new questions, collect new evidences and provide new methods^[4]. Schaefer (2010) believes that social network relationship for preschool children includes three forms: reciprocal-type, popular-type and closed-type^[5].

Density is one of the most commonly used measures in SNA, which refers to the closeness degree of connection between points in a graph^[6]. According to Mayhew and Lvinger (1976), the maximum density that can be achieved in the actual network diagram is 0.5.

Centrality is a measure of individual power. Nock believes that the power is composed of influence and domination^[7]. Centrality can be divided into point centrality, intermediate centrality and close centrality, including the centrality of point and the central potential of graph. Liu Jun (2009) pointed out that the results for the three kinds of centrality measurement are similar. The relative centrality of point centrality can be used to focus on communication activities, and the proximity

centrality can be used to focus on alienation. This study focuses on the relative degree centrality and closeness centrality of each child as an independent point.

3 Research methods

(1) Peer nomination method

The researchers used Pang Lijuan's (1994) peer nomination method to conduct a field survey of children. Ask each child in the class individually: which children do you like in the class, and who do you like to play with at ordinary times? Considering that children may forget, children can be allowed to see the whole class through the window when answering, until all names nominated by children are recorded.

(2) Social network analysis

The peer-relationship nominees are arranged into a matrix, the centrality and density of each child are analyzed by using Ucinet software, and the network map is presented by using Netdraw software.

(3) Research object

| | Male | Female | Sum |
|------|------|--------|-----|
| City | 20 | 18 | 38 |
| Town | 21 | 13 | 34 |
| Sum | 41 | 31 | 72 |

4 Results

(1) Overall peer relationship map

As shown in Fig. 1 and Fig. 2, it is a circular directional distribution of peer relationship for children in a class. The figure consists of a dot, a line and an arrow, each child corresponds to a dot, and the arrow points to the nominated child. Among them, pink represents girls and blue represents boys.

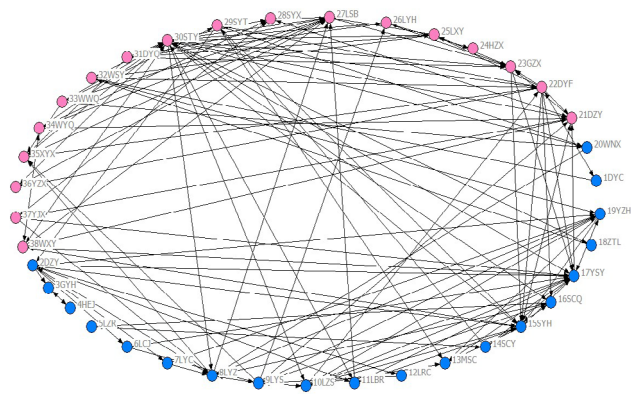


Fig. 1 Directional distribution of children's peer relationship in urban classes

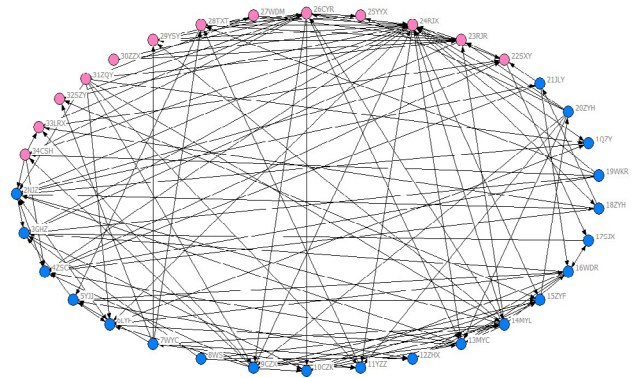


Fig. 2 Directed distribution of peer relationship among children in Township classes

It can be seen that children with more received arrows are more popular in the class; children with more sent arrows are more likely to have a positive attitude towards peer interaction; children with more received and sent arrows are more likely to have frequent interpersonal communication in the class and have greater influence in the class; Oppositely, children with less received and sent arrows are more likely to be ignored by peers in the class.

power in the class, and correspondingly has stronger influence and domination. Combined with the interview and observation of teachers, we know that the girl No. 24 is really smart and cute.

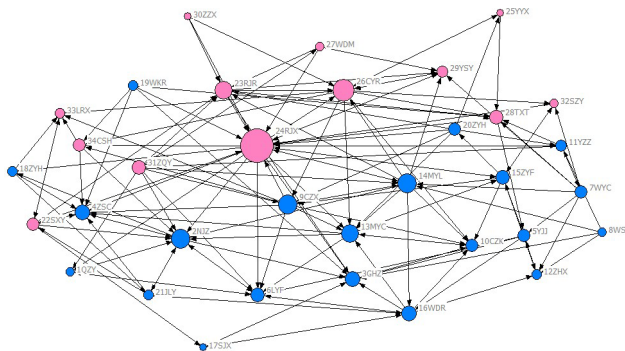


Fig. 5 Relative centrality of township class

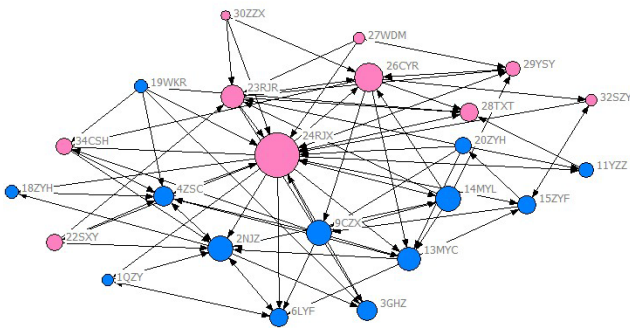


Fig. 6 Network of individual centers for girl No. 24

On the contrary, girls No. 25, No. 30 and boys No. 17 had the lowest relative centrality and fewer peers in the class. It is worth noting that there are no children nominating girls No.30, 31 and boys No.8 and 19 in the class. That is to say, they are short of friends who like them in the class. In the actual observation and interview, we can see that because of long-term illness, the girl No.31 spend less time with children in class. However, due to family factors and absence of parents, the boy No.8 has a variety of bad behavior and habits, who is disliked by the whole class of children and teachers. The girl No. 30 and boy No. 19 are introverted and are not good at communicating with others. In a word, this kind of children are easy to be ignored, and also prone to behavior and psychological problems.

2. Approach centrality

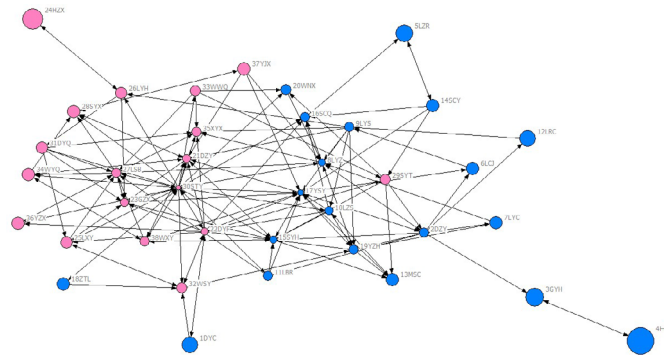


Fig. 7 Approach centrality for urban classes

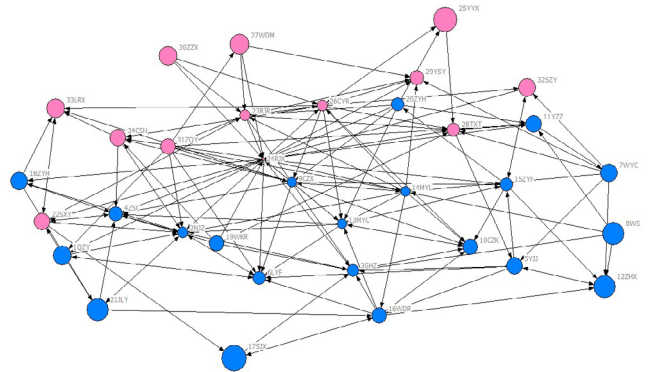


Fig. 8 Approach centrality for township classes

The higher the children are approaching to the centrality, the stronger their independence is, and the more unaffected they are. The relative centrality can also be confirmed from the other side for approaching centrality. Compared with Fig. 6 and Fig. 7, it can be seen that the independence of peer relationship for urban children is lower than that of rural children. That is to say, there are more people in the class of villages and towns who are wandering from the edge of the collective, and are less affected by other people in the class.

5 Comparison between urban and rural areas

(1) The difference of density and centrality between urban and rural areas

In terms of density and centrality, compared with urban classes and township classes, although the overall density of urban classes is lower, the individual

differences are not particularly large; while the overall density of township classes is slightly high, the individual differences are particularly obvious. Therefore, if urban teacher pays attention to the education and guidance of some children, he can improve the overall level of peer communication in the class. However, township teachers need to pay more attention to bring back some children who are on the edge of the group to the class group, in order to effectively promote the further development of peer relationship in the class.

(2) Urban and rural common points

Children in urban and rural areas have typical same-sex tendencies in peer selection. This conclusion is consistent with the research conclusion of Wang Xiaohui, who proposed that teachers should provide more opportunities for children to communicate with the opposite sex^[8]. In the actual observation and interview, we know that the reason why girls seldom play with boys is that boys like to fight and make noise, girls are educated by their parents' stereotyped gender, like to be quiet and avoid conflict. Therefore, teachers need to eliminate stereotypes in early childhood education in order to effectively promote the communication between children of different genders. In addition to peer selection, each class has children with poor peer relationship. Teachers should pay attention to class development of group belonging sense for these children, to avoid group isolation of children.

6 Conclusions and recommendations

(1) About class cohesion

From the results of density analysis, the density of township class is slightly higher than that of urban class, which shows that the peer relationship network of children in township class is relatively close. In addition, the density of both urban and rural classes is not high, and the overall cohesion of the class needs to be improved. This shows that teachers can carry out more group activities, increase the cohesion of the class, and improve the friendly atmosphere of the class.

(2) About centrality

There are very typical high individual centrality children in both urban and rural classes. This kind of children has a higher influence in the class. Teachers should pay special attention to the education for this kind of children. From their own point of view, such children will be too proud to be modest. In the long run, it will affect the development of peer relationship

and physical and mental health. Therefore, for such children, teachers and parents should not praise them excessively. They must be taught the modesty and know that "there are talents outside, there are experts outside", so that they can grow and progress continuously. From the class point of view, because liking to imitate others is the age characteristics for large class children. We should strive to set a good example for such children and form a positive impact on other children in the class.

The children with lower individual centrality (that is, children close to the higher centrality) are less in cities and more in township classes. This shows that there are more children with poor peer relationship in township classes. Children who are close to the centrality have a weak sense of existence in the class, who may often be ignored by peers or teachers. In the long run, it may affect their belonging sense, thus affecting their psychological sound development. Teachers should take a positive attitude towards this kind of children, communicate with parents in time, and give children more strategic guidance on peer interaction. Preschool teachers in rural classes should pay special attention to this.

7 Deficiencies and prospects

From the perspective of longitudinal study, due to the limitations of conditions, this study failed to conduct long-term real-time observation. I hope to follow up the relevant research in the future and find out the dynamic evolution process of peer relationship. From the perspective of horizontal research, this study lacks the study of bad peer relationship. On the one hand, children are too young; on the other hand, the personality of domestic children is not particularly distinctive, and most children have no annoyed friends. In addition, foreign research on unwelcome children is mainly from the primary stage. For example, Huiting (2012) pointed out in his research that the structure of social network of bullying relationship for primary school students tends to be centralized^[9], that is, individual children often bully many people.

Other scholars divide the relationship into strong relationship and weak relationship. For example, the result of Kalish (2006) shows that people who think they are vulnerable to external forces tend to stay in a closed network of weak relationships^[10]. In the future, domestic research can also increase the inspection of the relationship intensity based on the scope of the

relationship. Xiaoyu Li (2019) et al. divided the social network status of individuals into member type, contact type and isolated type. To investigate the influence of social network status on individual sleep^[11], we can also combine peer relationship with other factors in future research.

Nowadays, more and more emphasis is placed on the development of children's social adaptability,

the ability to communicate with people, and more importantly, the ability to grow up healthily. A good beginning is half the way to success. The interaction between children will play an increasingly important role as they grow older. Therefore, teachers and parents should pay attention to children's peer relationship, find out problems and take corresponding measures in time.