Contents lists available at ScienceDirect

# Educational Research Review

Methodological Reviews

# Using sociometric techniques to assess the social impacts of inclusion: Some methodological considerations

CrossMark

Elias Avramidis [a], [*], Vasilis Strogilos [b], Katerina Aroni [a],
Christina Thessalia Kantaraki [a]

[a] *Department of Special Education, University of Thessaly, Argonafton & Fillelinon Str, Volos, 38221, Greece*
[b] *Nanyang Technological University, National Institute of Education, 1 Nanyang Walk, 637616, Singapore*

## ARTICLE INFO

## ABSTRACT

In recent years, sociometric techniques have been increasingly used to assess friendship development in children with special educational needs integrated in regular educational settings. In this paper, the findings produced by different techniques are contrasted with a view to examining whether the variable findings reported can be attributed to the technique employed. The analysis revealed that peer nominations have been used to determine pupils' social status and have overwhelmingly produced negative results. Peer ratings have been used to ascertain the level of acceptance pupils enjoy within their class network and have also produced negative results. Social Cognitive Mapping has been used to obtain information about the nature of social networks and the relations among peers and has produced mixed to positive results. As such, Social Cognitive Mapping could be viewed as a more robust approach that addresses more thoroughly the complexities of young children's social relations than the other two classic sociometric techniques. The paper concludes with highlighting methodological challenges surrounding the application of sociometric techniques and advocates their embedding within innovative multi-method research designs.

## 1. Introduction

One of the main arguments for promoting inclusive education is the social benefits pupils accredited with Special Educational Needs (SEN) gain from their increased interaction with typically achieving peers. Proponents of inclusion argue that inclusive schools are the most effective means for reducing prejudice, combating discriminatory attitudes, and ultimately leading to the creation of a more accepting society (Booth & Ainscow, 2013). By contrast, segregated provisions are assumed to reproduce stigmatisation and prejudice and on this basis should be avoided. While these assumptions have been traditionally taken for granted, the results from many empirical studies have found integrated pupils with SEN to be experiencing marginalisation and loneliness (Bakkaloğlu, 2010; Bossaert, Colpin, Pijl, & Petry, 2012; Lackaye & Margalit, 2006; Mamas, 2012; Valås, 1999). Indeed, recent reviews of the relevant literature (Bossaert, Colpin, Pijl, & Petry, 2013; Koster, Nakken, Pijl, & Van Houten, 2009; Ruijs & Peetsma, 2009) have concluded that the picture emerging from studies examining the social outcomes

---

\* Corresponding author.
E-mail address: avramidis@uth.gr (E. Avramidis).

of inclusion is a rather negative one; while some studies reporting positive results can be found, the overwhelming majority of research in the field highlights the challenge surrounding the development of meaningful relationships with peers.

The gloomy picture portrayed in the literature could be attributed to the way "social inclusion" is operationally defined and measured in different studies. Most research studies to date have employed sociometric techniques to examine a single social indicator, thus offering a partial evaluation of the social outcomes of inclusion (see Koster et al., [2010] for an exception where a more holistic model of 'social participation' was adopted). Strikingly, most studies in the field have solely investigated the social position pupils with SEN occupy within the social network of the mainstream class as determined through the classic peer nomination technique. What has been consistently reported in early such studies is that integrated pupils with SEN are less accepted and more rejected by their mainstream classmates (Larrivee & Horne, 1991; Vaughn, Elbaum, & Schumm, 1996). For example, an American study by Pavri and Luftig (2000), found that 11-year-old pupils with learning disabilities in inclusive provision were less popular than their typically achieving peers and they experienced more loneliness. Additionally, even where children with SEN seem to be accepted by their peers, their social status remains significantly poorer. For example, in a meta-analysis of 17 sociometric studies conducted in the US between 1978 and 1991, pupils identified with SEN had significantly reduced social status compared to their mainstream peers (Ochoa & Olivarez, 1995). In another meta-analysis, Nowicki (2003) also concluded that these children occupy a less favourable social position in their classroom and experience more social difficulties than their average to high-achieving peers. What is worrying is that similar negative findings have been reported across different national school systems including the UK (Avramidis, 2013; Frederickson & Furnham, 2004; Nabuzoka & Smith, 1993), Canada (Kuhne & Wiener, 2000), Spain (Cambra & Silvestre, 2003), the US (Estell et al., 2008), Norway (Pijl, Frostad, & Flem, 2008), Holland (Bakker, Denessen, Bosman, Krijger, & Bouts, 2007; Koster, Pijl, Nakken, & Van Houten, 2010), Cyprus (Mamas, 2012), Italy (Nepi, Facondini, Nucci, & Peru, 2013), and Germany (Krull, Wilbert, & Hennemann, 2014; Mand, 2007). The results from these studies suggest that SEN pupils tend to hold a lower social position and to have fewer stable friendships than their peers. Of even greater concern is the evidence indicating that the social status held by SEN pupils remains fairly stable both when it is examined at two different points in the same school year (Kuhne & Wiener, 2000; Reed, McIntyre, Dusek, & Quintero, 2011) and annually at the same time of the year (Frederickson & Furnham, 2001; Frostad, Mjaavatn, & Pijl, 2011).

One explanation for the difficulties pupils with SEN have in building relationships with typically developing classmates points to insufficient sets of age-group appropriate social skills, which prevents them from successfully interacting and ultimately bonding with peers (Frostad & Pijl, 2007). This is especially evident in children experiencing behavioural difficulties (De Monchy, Pijl, & Zandberg, 2004; Mand, 2007; Krull et al., 2014), including those diagnosed with Attention Deficit Hyperactivity Disorder (Grygiel, Humenny, Rębisz, Bajcar, & Świtaj, 2014), or pupils with autistic spectrum disorders (Chamberlain, Kasari, & Rotherham-Fuller, 2007; Symes & Humphrey, 2010), and to a lesser extent in pupils with mild intellectual disabilities. By contrast, pupils with motor disabilities do not usually experience social participation problems as their type of disability has the least impact on social functioning in the classroom (Koster et al., 2010).

Nevertheless, other studies have shown that, despite their generally low social status, children accredited with SEN had managed to form and maintain some positive social relationships in inclusive settings and felt part of a social network (Meyer, 2001; Pavri & Monda-Amaya, 2001). This is usually reported in studies which, in addition to determining social position, focus on the social clusters formed within a class network. For example, in Estell et al,. (2008) 2-year study, pupils with SEN were found to be less often nominated as being someone's best friend and less often nominated as popular; however, at the same time, they were equally often found to be members of a group within their class and were equally central in these groups. Similar findings were reported in a study by Avramidis (2010) where most pupils with SEN were equally often found to be members of a peer group while the percentage of isolated pupils with SEN was similar to the equivalent percentage of typically achieving ones. One useful observation emerging from this evidence is that we ought to distinguish between the "social status" or "position" pupils with SEN hold within their mainstream classes and that of their social participation or membership in peer groups. With this in mind, the literature review presented in this paper sought to test the hypothesis that the findings reported in various sociometric studies are largely dependent on the sociometric techniques utilized. Accordingly, it is towards presenting the most common sociometric techniques that we turn next.

## 2. Techniques for ascertaining social status, social acceptance, and group membership

The increased opportunities for social interaction afforded to children within a school setting normally lead to the formation of peer groups and the development of friendship networks. In sociometry, the term 'dyad' is used to denote a friendship between 2 persons while the term 'clique' is used to refer to groups of three or more peers (Wasserman & Faust, 1997). Moreover, as Chan and Mpofu (2001) observe, the term "social acceptance" has been defined as the child's actual liking by their peers while the term "social status" or "social position" refers to the child's comparative social standing or friendship with other children. Although the social status a pupil might enjoy in their class network is dependent on many (e.g. physical appearance, athletic competence, social "conduct" to name but a few), it is generally accepted that gaining their classmates' acceptance is a prerequisite for a child's social participation and for any meaningful relationships to develop. To this end, peer ratings and peer nominations are the two main techniques employed to evaluate pupils' social relationships. Generally, peer ratings are used to ascertain the level of acceptance pupils enjoy within their class network and peer nominations are used to determine pupils' social status. These techniques are further explicated next.