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Preschool Teachers' Ideas About Practices To Promote Peer Relations: Using Q Methodology To Determine Viewpoints

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Abstract

An internationally accepted definition of early childhood inclusion includes the right to achieve a sense of belonging and membership, positive social relationships, and friendships. Although Portuguese preschool curriculum guidelines value child-child interactions as an outcome by itself and as means to achieving other development and learning outcomes it does not explicitly mention social participation indicators. Additionally, information is lacking on Portuguese preschool teachers' beliefs, priorities, and practices specifically related to the support of peer relations. This study was developed in the scope of the project *Enhancing peer relationships: Preschool teachers' ideas and practices*. One of its goals is to understand Portuguese preschool teacher's ideas about what is important in supporting peer interactions, relationships, and group membership, for children with and without disabilities. To pursue this goal Q methodology was applied. We developed a *Q sample* consisting of 74 items that reflect a range of possible interventions targeted at enhancing social inclusion and peer interactions and relationships. The *P sample* was composed by 43 preschool teachers and their individual Q sorts were subjected to principal components analyses (PCA) followed by varimax rotation. A seven-component solution, explaining 55.5% of the variance, was considered the starting point for the decision-making process on the number of components to be considered as the best solution. Both statistical and conceptual criteria are being used to determine the final number of viewpoints. This presentation describes this decision-making process and the results will be discussed according to their implications for the global project.

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1. Introduction

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Promoting social skills and positive relationships for all children, including children with special needs has been increasingly recognized as very important for later success in life. Children who learn positive interactions with adults and peers develop appropriate skills for negotiating in times of conflict; have a sense of belonging and acceptance; and establish attitudes, values, and skills essential for their learning in school and their life in the community (Katz & Galbraith, 2006). An accepted definition of early childhood inclusion includes the right to achieve a sense of belonging and membership, positive social relationships, and friendships. Some children, for different reasons, may have difficulties in establishing positive and ongoing relationships with their peers in classrooms. Because of this, several researchers point out an intervention hierarchy for assisting decisions about how to promote peer interactions of young children with peer-related social competence difficulties in natural environments, particularly in inclusive preschool settings (e.g., Brown, Odom, & Conroy, 2001). This hierarchy goes from classroom-wide interventions, resulting from providing high quality care and education, to explicit social skills training. Portuguese preschool curriculum guidelines value child-child interactions as an outcome by itself and as means to achieving other development and learning outcomes, but the document does not explicitly mention social participation indicators. Additionally, information is lacking on Portuguese preschool teachers' beliefs, priorities, and practices specifically related to the support of peer relations.

This study was developed in the scope of the project *Enhancing peer relationships: Preschool teachers' ideas and practices*. One of its goals is to understand Portuguese preschool teacher's ideas about what is important in supporting peer interactions, relationships, and group membership, for children with and without disabilities. Q methodology was chosen to address this question.

2. Brief Overview of Q Methodology

Q methodology provides a set of procedures for the systematic study of people's viewpoints, opinions, and beliefs on a particular subject (McKeown & Thomas, 1988). It is both a way of gathering data and a way of analyzing data for classifying individuals into groups on the basis of their ideas about the topic being investigated (Schlinger, 1969). In a study based on Q methodology, respondents are presented with a set of statements related with a topic, and are asked to rank order those statements along a continuum of significance that goes from "most disagree" to "most agree". Each statement, or item, is assigned with a ranking position and the overall configuration of the items consists of a Q sort reflecting the respondent's viewpoint on the given topic. Within the Q methodology, the collection of statements is called the *Q sample* and the group of persons who are required to rank order the statements is called the *P sample* (e.g., McKeown & Thomas, 1988). Q sorts obtained from several respondents are correlated and factor analyzed. In a Q study individuals are correlated instead variables or items. By correlating people, Q factor analysis identifies the number of natural groups of respondents who sorted items in the most similar way. Respondents with similar viewpoints about a given topic will share the same factor. These factors/viewpoints are described and interpreted considering those items that can be used to highlight the differences and the similarities among factors, but the each viewpoint must be understood holistically (Brown, 1980; Watts & Stenner, 2012).

3. Method

3.1. The Q sample - Instrument

The Q sample is the collection of items that respondents have to rank order in a Q sort. According to the main question of this study a *ready-made* Q sample was considered. A *ready-made* sample is based on sources other than the own communications of individuals (McKeown & Thomas 1988).

We developed a *Q sample* consisting of 74 items that reflect a range of possible practices targeted at enhancing social inclusion and positive peer relationships. To guide the selection of the items describing preschool classroom practices, four broad categories were considered: overall quality practices focused on supporting groups; practices embedded in classroom routines that focus on peer relationships; intensive and individualized interventions; practices focused on the teacher's role in the program (e.g., Brown, Odom, & Conroy, 2001; Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003).

Each item corresponded to one statement describing a preschool practice. The statements were worded in the first

person singular and all of them began with the some expression: *In my practice I value ...* (e.g., *In my practice I value taking into account the interests of all children to decide about the areas and the materials to be included in the classroom*). The items were printed on white cards.

3.2. The P sample – Participants

The P sample was composed by 43 preschool teachers responsible for inclusive classrooms selected from public, private non-profit, and private for profit institutions.

3.3. Procedure - Conditions of the Q sort

Before the administration of the Q sort, the format of the continuum used to do the distribution was decided (Figure 1). The umbrella question that guided the instructions for the participants was also pre-determined: What are the practices that you value more in order to promote positive relationships in your classroom? Please have in mind *all* the children of your group, including those with special needs.

	Less valuable			Neutral point				Very valuable			
Scale	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Number of items	5	5	6	7	9	10	9	7	6	5	5

Figure 1. Q sort continuum format

The 43 teachers were asked to choose a convenient time. The Q sorts were conducted in the preschools where teachers developed their work. The sessions took place in small offices or in the classrooms without the children. At the beginning of the session the procedure was explained and illustrated. The average time required to sort the 74 items was approximately 1 hour. One researcher was present during the sorting process, answering all questions posed by participants. Teachers' commentaries and reflections were recorded.

3.4. Q sort analyses

Using IBM SPSS Statistics 19, a data file was organized as a transposed matrix. The data matrix columns contained the participants' identification numbers, the rows represented the individual items, and scores (i.e., -5 to +5) were entered in the cells. The 43 individual Q sorts were subjected to principal components analyses (PCA), followed by varimax rotation.

4. Results

The eigenvalue (EV) greater than 1 rule and the visual inspection of the scree plot were the starting point to select the components. According to the EV, seven components could be considered. In the context of principal components analyses, the number of components to extract can be indicated by the point at which the line, that plots the EV of all components, changes the slope. The inspection of the scree plot told us that the slope changed after the EV corresponding to a three component solution.

However, these initial statistics just help us to frame the number of possible solutions. In this stage of the decision-making process, "we need to decide which is the best solution in a particular context, on behalf of our data and ultimately in relation to our own aims and purposes" (Watts & Stenner, 2012, p. 92).

Our aim to conduct a Q method study was to understand Portuguese preschool teacher's ideas about what is important in supporting peer interactions in an inclusive classroom. Given the lack of information on this topic, it

was our goal to find as many different viewpoints as possible.

Five PCAs were conducted to support a satisfying decision. In each solution we inspected the explained variance, the number of participants with noteworthy and clean associations with the components, as well as the positions of the participants in the components. Table 1 synthesizes this information.

The five solutions accounted for a satisfying percentage of explained variance, that is, above 35-40% (Watts & Stenner, 2012). Only those teachers' Q sorts, which had significant and clean associations with a given component can be considered to define the viewpoint. A coefficient equal or greater than, approximately, 0.38 was considered indicative of a meaningful relationship between the participant and the viewpoint (e.g., Schlinger, 1969; Van Exel & de Graaf, 2005). In these solutions, a number of participants between 10 and 13 needed to be excluded, because they had no clear association with at least one component or because they were not notably associated with any of the components.

Table 1. Summary of the five principal components analyses

	PCA3	PCA4	PCA5	PCA6	PCA7
Explained variance	38.6%	43.4%	47.8%	51.8%	55.3%
Number of participants excluded	10	12	13	11	10
Number of participants in components	C1: 11 C2: 13 C3: 09	C1: 07 C2: 11 C3: 05 C4: 08	C1: 6 C2: 6 C3: 9 C4: 6 C5: 3	C1: 7 C2: 6 C3: 8 C4: 4 C5: 4 C6: 3	C1: 6 C2: 6 C3: 7 C4: 6 C5: 3 C6: 2 C7: 3

The solutions that extracted four, five, and six components excluded more participants than the three and seven components solutions. This is important because it was our intention to maintain as many participants as possible. Regarding the placement of the participants in the components some similarities were found. For instance, teachers number 6, 2, 22, 32 were associated with the component 1 of the four, five, six, and seven components solutions; teachers number 1, 4, 3, 13, 38, were associated with the component 2 of the four components solutions, and with the component 3 of the five and six components solutions. Thus, we could expect similar ideas characterising these components. The inspection of the participants' distribution across the components of these four solutions, lead us to select the seven component solution for the viewpoints interpretation. The placement of the participants in the three components solution had an overall configuration quite different from the other solutions. Thus, the resultant viewpoints from this solution could have different configurations regarding practices to promote peer relationships.

The three components solution and the seven components solution were considered to be interpreted. Further calculations were made in order to calculate the *factor array* for the two solutions. A *factor array* is "a single Q sort configured to represent the viewpoint of a particular factor" (Watts & Stenner, 2012, p.140).

For the two components solutions the following procedure was conducted. Once each teacher's Q sort was assigned to a particular component (i.e., viewpoint), we calculated the extent to which each defining sort contributed to the respective component. For all the components each Q sort was weighted according to its component loading (Schlinger, 1969; Watts & Stenner, 2012). One component/viewpoint at a time, original Q sort scores of each participant were multiplied by the appropriate weighting. These weighted scores were summed, item by item, across the participants representing the given component. The weighted and summed scores were normalized being transformed into *z*-scores (Van Exel & de Graaf, 2005; Watts & Stenner, 2012). These scores were *t* rank ordered into the original Q sort continuum which teachers had followed when sorting the statements. This produced an idealized Q sort for each of the components in the two solutions being analyzed. That is, at this point we had a *factor array* for the three components solution, and a *factor array* for the seven components solution.

At this stage of decision-making conceptual criteria were used to determine the final number of viewpoints to be considered, the three components solution or the seven one.

The profile of each viewpoint was established by ordering the items from the highest to the lowest score. Statements ranked at both extremes of each profile (z -score larger than 1 and smaller than -1) were considered. The categories of items used to organize the Q sample were the first lens to choose the items that could contribute to differentiate the content of the viewpoints.

In both solutions all the viewpoints highlight the importance given to *overall quality practices focused on supporting groups and classrooms*, and *practices embedded in classroom routines that focus on peer relationships*. In both solutions there are viewpoints which the main emphasis of the practices is placed on the overall quality practices (one viewpoint in the three components solution; two viewpoints in the seven components solution). However, all the viewpoints of the seven components solution showed more diversity of practices when we take into consideration the four broad categories that guided the selection of the Q sample. Particularly, *practices focused on the teacher's role in the program* were found in three viewpoints of this solution, and practices related with *intensive and individualized interventions* were valued in all the viewpoints. This last aspect was considered of great importance, due to the overall focus on preschool inclusion. All the assessed classrooms include children with special needs that may need more support to develop and maintain peers relationships. For this reason the seven component solution was chosen as the best option to explore how teachers understand the importance of different practices to promote positive relationships for *all* children.

5. Discussion

This study was developed in the scope of the project *Enhancing peer relationships: Preschool teachers' ideas and practices* that collects information of different aspects of teachers' practices in the classroom using both qualitative and quantitative methods. Understanding the *gestalt configuration* (Watts & Stenner, 2012) of these viewpoints will be important to expand our comprehension of other aspects under investigation, including observed classroom practices and teacher-child interactions. Particularly, we view the results of this study as a strong support to the development of new measures on teacher's beliefs and practices to promote peer interactions and relationships.

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References

- Brown, W.H., Odom, S.L., & Conroy, M.A. (2001). An intervention hierarchy for promoting preschool children's peer interactions in natural environments. *Topics in Early Childhood Special Education*, 21, 90-134.
- Fox, L., Dunlap, G., Hemmeter, M. L., Joseph, G. E., & Strain, P. S. (2003). The teaching pyramid: A model for supporting social competence and preventing challenging behavior in young children. *Young Children*, 58(4), 48-52.
- McKeown, B., & Thomas, D. (1988). *Q methodology*. Newbury Park, CA: Sage.
- Schlinger, M. J. (1969). Cues on Q-technique. *Journal of Advertising Research*, 9(3), 53-60.
- Van Exel, J., & de Graaf, G. (2005). *Q methodology. A sneak preview*. Retrieved from www.qmethod.org/howto
- Watts, S. & Stenner, P. (2005). *Doing Q methodology: Theory, method and interpretation*. *Qualitative Research in Psychology*, 2, 67-91.
- Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method and interpretation*. London: Sage.