Associations between emotional scaffolding, classroom quality and dialectical thinking support in kindergarten

Nikolay Veraksa a*, Lomonosov Moscow State University, Department of Educational Psychology and Pedagogy, Faculty of Psychology / Moscow City University, Laboratory of Child Development, Institute of System Project, Mokhovaya str., 11/9, Moscow, 125009, Russian Federation

Zlata Airapetyan b, Junior Researcher, Department of Educational Psychology and Pedagogy, Faculty of Psychology, Lomonosov Moscow State University, Mokhovaya str., 11/9, Moscow, 125009, Russian Federation

Evgenii Krasheninnikov-Khait c, Junior Researcher, Laboratory of Child Development, Institute of System Project, Moscow City University, Maly Kazenny Pereulok, SB, 105064, Moscow, Russian Federation

Margarita Gavrilova d, Junior Researcher, Department of Educational Psychology and Pedagogy, Faculty of Psychology, Lomonosov Moscow State University, Mokhovaya str., 11/9, Moscow, 125009, Russian Federation

Suggested Citation:

Received from June 12, 2021; revised from August 20, 2021; accepted from October 12, 2021.
Selection and peer review under responsibility of Prof. Dr. Huseyin Uzunboylu, Higher Education Planning, Supervision, Accreditation and Coordination Board, Cyprus.
©2021 Birlesik Dunya Yenilik Arastirma ve Yayincilik Merkezi. All rights reserved.

Abstract

Emotional scaffolding by the teachers of kindergarten children facilitates children's emotional well-being and contributes to their achievements in school. Our aim was to analyze the association between emotional scaffolding, dialectical thinking support and classroom quality. We used the Early Childhood Environment Rating Scale (ECERS-R), Dialectical Thinking Support (DTS) scale and Emotion Socialization Observation Scale (ESOS). The study involved 22 kindergarten groups attended by 6-7-year-old children and their educators who have worked with these children for several years. The actions of teachers aimed at emotional expressiveness modeling and teaching about emotions are positively associated with high-classroom and dialectical thinking support. We revealed for the first time associations between dialectical thinking support and emotional scaffolding in children. This suggests that the discussion of opposites and contradictions in objects and situations in the classroom environment and the study of them in the process of change is positively associated with emotion socialization.

Keywords: dialectical thinking; teaching about emotions; emotional scaffolding; preschoolers; quality of educational environment

* ADDRESS FOR CORRESPONDENCE: Nikolay Veraksa, Lomonosov Moscow State University, Mokhovaya str., 11/9, Moscow, 125009, Russian Federation
E-mail address: neveraksa@gmail.com
1. Introduction

Emotional scaffolding by teachers is a topical aspect of preschoolers’ development (Bailey, Denham, & Curby, 2013; Renshaw, 2013; Park, 2016; Pakarinen, Lerkkanen, & von Suchodoletz, 2020) and one of the key components of assessing classroom quality (Siraj, Kingston, & Melhuish, 2015; Sylva, et al., 2011; Smirnova, 2019). For emotional scaffolding to develop in children, teachers must have the appropriate competencies, including the ability, when interacting with children (Morris et al., 2013), to name emotions, to facilitate understanding of externalizations of emotions and the reasons for their emerging, as well as to suggest appropriate methods for regulating emotions (Ahn, 2005). A preschool educator with exploratory behaviour contributes to the development of exploratory behaviour in children and their emotional well-being (Akhmetzyanova, Artemeva, & Artishcheva, 2020; Barandiaran, et al., 2015; Mashburn et al., 2008; Mahasneh & Gazo, 2019). Expanding knowledge about emotions in preschool-age children gives an advantage to preschoolers in communication with peers and makes them socially successful with other children (Izard et al., 2001; Denham et al., 2003). Children’s knowledge of emotions predicts their successful adaptation to school (Shields et al., 2001), as well as their academic and social success up to the age of 9 (Izard et al., 2001). As stated in the NAEYC’s report, the teacher-child interaction influences classroom quality (NAEYC, 2006).

While analysing research conducted based on ECERS-R, S. Sheridan marked a difference in the relationship between teachers and children determined by classroom quality. Teachers in groups with a low classroom quality were more focused on activities. Teachers in groups with a high classroom quality were more interested in the meanings children obtained from their emotions while taking part in different activities (Sheridan, 2009). Teachers in groups with a low classroom quality perceived material resources, classes, and interactions with children as isolated situations or as routine. In contrast, in groups with a high classroom quality, material resources, classes, teaching strategies, interaction with children, children’s experiences, documentation, and assessment were perceived as integrated components.

A preschool education of higher classroom quality is positively associated with “higher receptive vocabulary, literacy and maths scores and lower internalising and externalising behaviour scores at four to five years of age and these effects although weaker, remained evident at age six to seven years” (Gialamas et al., 2014, p. 992). Additionally, unexpected results in the study revealed the influence of classroom quality in kindergarten centres on the level of children’s emotion understanding and their awareness of the causes of emotions. The research showed that children from groups of low classroom quality demonstrated a higher level of understanding emotions, and the mental causes of emotions, than children who attended groups with a high classroom quality (Veraksa, Gavrilova & Pons, 2020). The results of this study allowed us to assume that in groups with a low classroom quality, situations occur that address both the emotional and the cognitive spheres.

L. S. Vygotsky (2017) emphasised that understanding cognitive and emotional development is possible only when considering them as a single unit of “changes in their cross-functional connections and relationships” (p.79). On the other hand, while characterising a child’s thinking, K. R. Rigel (1973) highlighted the following dialectical form: “As for a student puzzled by an ambiguous multiple choice item (and which item fails to be ambiguous), it matters little for an understanding of the student’s thinking whether or not he finally finds the ‘correct’ answer; what matters are the ambiguity and the contradictions that he experiences. Thinking, in the dialectic sense, is the process of transforming contradictory experience into momentary stable structures. These structures consolidate the contradictory evidence but do not represent thinking; they merely represent objectified products of thinking” (p. 357).

A study by N. E. Veraksa and colleagues (2019) found a positive association between a high Staff-Child Interaction score (ECERS-R) and high score on the Dialectical Thinking Support (DTS) scale. Meaning that teachers who maintain an informal attitude towards children and are emotionally involved in the process of communication, more often support the development of dialectical thinking.
in children. The study previously found that in the ECERS-R scale, no attention is paid to the assessment of processes containing contradictions. Dialectical thinking, as determined by N. E. Veraksa, is a system of mental actions aimed at performing three types of tasks: understanding the process of development, solving contradictions, and creating new ideas and objects (Veraksa, 2006). The Dialectical Thinking Support (DTS) scale is used to assess support for dialectical thinking in children in kindergarten. During observation, it is noted whether teachers discuss contradictions with children, whether they study developmental processes, including cyclical changes, etc. An earlier study by N. E. Veraksa and colleagues (2019) found that high classroom quality on the ECERS-R Language-Reas indicator is associated with poor quality of support given by educators to children to develop dialectical thinking. Researchers (Veraksa, Shiyan & Sviridova, 2019) assume that this could mean that teachers in modern educational conditions in kindergarten classrooms with 5-7-year-old children aim to create conditions to facilitate formal-logical thinking development. This manifests itself when teachers do not allow contradictions during the discussion of lessons, demand unambiguous answers, and the physical environment rarely changes. Thus, the application of the DTS scale complements the assessment of educational environments carried out with ECERS-R and allows us to clarify the tendency in the development of dialectical thinking in preschool education.

So, classroom quality is associated with the nature of the teacher's interaction with children throughout the educational process. Simultaneously, the development of emotion understanding is higher in groups where the classroom quality is low. This disparity is probably associated with many situations in which children solve important issues for themselves. We suggested that situations of this kind may be associated with the ability to overcome contradictions in tasks and the development of dialectical thinking, which targets overcoming contradictions. This assumption is supported by the fact that in the earlier study N. E. Veraksa and colleagues (2019) found that support of dialectical thinking in kindergarten was positively associated with high-classroom quality according to the criterion Interaction between staff and children. This implies the presence of an informal attitude of teachers towards children, emotional involvement and responsiveness of adults in the process of communication, etc. A study of the association between emotional scaffolding and dialectical thinking support in children by the teacher, and classroom quality has not previously been carried out. Therefore, in our research, we focused on the study of these aspects.

The purpose of this research is to analyse the correlation between assessments of emotional scaffolding with an evaluation of classroom quality, and the level of dialectical thinking support in children by teachers. We assumed that the assessment of emotional scaffolding by teachers would correlate with the assessment of classroom quality, and the level of support by teachers of dialectical thinking in children. There were two hypotheses formulated within the research. The first one is that in kindergarten classrooms with higher classroom quality (based on ECERS-R), teachers more often support children's emotions. The second one, that in groups where teachers support the development of dialectical thinking, they more often enable emotional scaffolding in children.

2. Materials and Methods

2.1. Sampling

The study involved 22 kindergarten groups in Moscow, attended by 6-7-year-old children. The research was conducted by observation during morning sessions of teachers who spent at least 35 hours a week for several years with these groups. All educators are women with advanced professional education in preschool pedagogics.

The expert from the research group was present in each group for 4-5 hours. The assessment was carried out during morning sessions when teachers actively interacted with children throughout
educational activities, walks, free play of children, and other activities. The study was carried out taking into account the requirements of The Ethics Committee of the Faculty of Psychology at MSU.

2.2. Methods

To assess the emotional scaffolding in children in kindergarten, we developed the Emotion Socialization Observation Scale (ESOS). ESOS is a tool for the structured observation of teacher actions and behaviour associated with the sphere of emotional scaffolding. The methodology includes three sections: reactions to children’s emotions; modeling of emotional expressiveness; and teaching about emotions. These sections correspond to the three mechanisms of emotional socialisation described in the scientific literature (Cumberland, Eisenberg & Spinrad, 1998; Garner, 2010). When developing the ESOS, the main components of emotional competence were considered: such as an understanding of emotions of oneself and others; the ability to read emotional signals and respond to the emotions of others; the ability to regulate one’s own emotions; and understanding the consequences of expressing one’s own emotions (Shields, et al., 2001; Denham, 1998). Thus, the methodology formulates real actions and features of teachers’ behaviour associated with the support of each of the listed aspects of the emotional development of children. The subscale Reactions to Children's Emotions included ten indicators for assessing the teacher’s behaviour (whether a teacher does/does not do the following): (a) Non-verbally supports children; (b) Names the emotions children are experiencing without reproach; (c) Provides emotional support to children; (d) Speaks with interest about children’s emotions; (e) Encourages the expression of emotions by children; (f) Is interested in children's emotions; (g) Prohibits the expression of emotions; (h) Shames children for experiencing/expressing any feelings; (i) Provides sarcastic comments in response to children’s emotions; (j) Expresses distrust towards the emotions expressed by children.

The subscale Modeling of Emotional Expressiveness included six indicators for assessing the teacher's behaviour (whether a teacher does/does not do the following): (a) Demonstrates good examples for expression, naming, or emotion regulation; (b) Comments on positive examples of children's expressions of emotions; (c) Develops a culture of support, empathy, and positive outlook among children; (d) Creates situations in which children can share their feelings; (e) Suggests that children assess examples of emotions’ expression; (f) Uses play techniques to develop expressiveness.

The subscale Teaching about Emotions included six indicators for assessing the teacher’s behaviour (whether a teacher does/does not do the following): (a) Names the emotional states of children, or books’ heroes, or the teacher’s own emotions; (b) Describes the display of emotion; (c) Indicates the reasons for the occurrence of certain emotions; (d) Develops self-awareness in children; (e) Demonstrates a rich emotion vocabulary; (f) Guides the expression and regulation of emotions. All criteria were assessed on a four-point scale: 1 – “not at all true”; 2 – “somewhat true”; 3 – “quite a bit true”; 4 – “very much true”. A research expert carried out the observation under normal conditions during daily activities in the kindergarten centres for 60 minutes. The advantage of the methodology is the direct observation of the interaction processes in the group rather than simply obtaining information about ways to develop emotional scaffolding of children based on teacher statements. Total scores were calculated on three subscales and then - the final score on the scale. The maximum score was 88.

The Russian version of ECERS-R (Early Childhood Environment Rating Scale-Revised) (Harms, Clifford & Cryer, 2016) was used to assess the classroom quality of the kindergartens. Seven ECERS-R subscales were used: Space and Furnishings; Personal Care Routines; Language-Reasoning; Activities; Interactions;
Program Structure; Parents and Staff. By “educational environment” the creators of ECERS-R mean: (a) the organisation of space (furniture, furnishings, equipment, etc.), (b) time (daily routine, the ratio of regulated and free activities) and (c) interaction (relationships within the children's group and with adults). For each of the Subscales, the average score was calculated with the maximum score being 7.

The Dialectical Thinking Support (DTS) scale (Veraksa, Shiyan, & Sviridova, 2019) was used to assess the teacher's level of support for dialectical thinking in children. This scale is composed of 5 types of teacher-student interactions, which are the evaluation of: (a) opposites in speech; (b) objects that contain a contradiction; (c) the processes of transformation; (d) cyclical events; (e) the possibility of changing the object environment. The expert assessed these indicators throughout educational activities and everyday interactions, with overall scores ranging from 1 to 7 points.

2.3. Data analysis

The data analysis included two stages: in the first stage, Cronbach's alpha test was applied to ensure the consistency of the indicators in each ESOS subscale. We measured a high degree of consistency between the 3 subscales: Reactions to Children's Emotions ($\alpha = 0.706$, $n = 10$), Modeling of Emotional Expressiveness ($\alpha = 0.815$, $n = 6$), Teaching about Emotions ($\alpha = 0.838$, $n = 6$). The data obtained allows us to use the subscales and the total score on the ESOS in the analysis. At the second stage, to analyse the relationships between the quality of the educational environment, support for the development of dialectical thinking and the development of emotional competencies in children, Spearman's rank was applied using SPSS v. 26 (IBM, 2020).

3. Results

3.1. Descriptive statistics

Table 1 displays statistical data from the assessment of the educational environment (via ECERS-R) and conditions for teachers to support the development of dialectical thinking (via DTS scale) and emotions (via ESOS) in 6-7-year-old children in 22 preschool groups. On average, across specific ECERS-R subscales, it was found that Interactions was rated high, but Activities was rated low, and in general, most groups received an average rating on the indicators of the quality of the educational environment. On average, for specific subscales of emotional scaffolding, it turned out that in the studied groups within the teacher-children interaction, the Reactions to Children’s Emotions’ criteria was a more common interaction as compared to Modeling of Emotional Expressiveness and Teaching about Emotions.

Table 1. Statistics of the results of assessing the educational environment of kindergarten groups ($n = 22$)

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Emotion Socialization Observation Scale</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactions to Children's Emotions</td>
<td>17</td>
<td>35</td>
<td>27.95</td>
<td>4.50</td>
</tr>
<tr>
<td>Modeling of Emotional Expressiveness</td>
<td>7</td>
<td>21</td>
<td>14.36</td>
<td>4.18</td>
</tr>
<tr>
<td>Teaching about Emotions</td>
<td>8</td>
<td>22</td>
<td>17.05</td>
<td>4.17</td>
</tr>
<tr>
<td>Final score</td>
<td>35</td>
<td>79</td>
<td>60.64</td>
<td>11.06</td>
</tr>
</tbody>
</table>
As a result of the correlation analysis, we obtained data on the association between the average indicators of the Emotion Socialization Observation Scale with specific subscales and the average scores of ECERS-R (see Table 2). It was identified that Teaching about emotions is associated with ECERS-R Space and Furnishings subscale \((r = 0.431, p = .038)\), the better emotional scaffolding is organised, the higher the score on ECERS-R Interaction criteria \((r = 0.546, p = .009)\) (see Table 2). The higher classroom quality on ECERS-R in general, the better the emotional scaffolding is organized on Modeling of Emotional Expressiveness \((r = 0.430, p = .046)\) and the higher the Final score \((r = 0.423, p = .050)\) (see Table 2). The higher the score on the Scale of Dialectical Thinking Support, the more often Modeling of Emotional Expressiveness \((r = 0.546 p = .009)\); Teaching about Emotions \((r = 0.729, p = .000)\); and emotion socialization scaffolding in general \((r = 0.676, p = .001)\) were observed (see Table 2).

Table 2. Correlations between classroom quality, support for dialectical thinking in children and emotional scaffolding in 6-7-year-old children

<table>
<thead>
<tr>
<th>ESOS</th>
<th>ECERS-R</th>
<th>DTS scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Reactions to children’s emotions</td>
<td>0.294</td>
<td>0.18</td>
</tr>
<tr>
<td>Modeling of emotional expressiveness</td>
<td>0.198</td>
<td>0.20</td>
</tr>
<tr>
<td>Teaching about emotions</td>
<td>0.431*</td>
<td>0.19</td>
</tr>
<tr>
<td>Final score</td>
<td>0.349</td>
<td>0.26</td>
</tr>
</tbody>
</table>

*\(P < 0.05\), **\(P < 0.01\)
4. Discussion

This research was devoted to studying the associations between emotional scaffolding, classroom quality, and support for dialectical thinking in 6-7-year-old preschoolers. The main objectives of the study were to analyse the relationship between emotional scaffolding (ESOS) by the teacher and the quality of the educational environment ECERS-R; and the relationship between emotional and dialectical thinking scaffolding in children (DTS scale). The obtained results demonstrate that high-quality organisation of rest and play conditions; the design of the space for children (Space and Furnishings, ECERS-R) positively correlates to the informing and expanding perception of emotions in children when teachers name and describe displays of emotions, develop self-awareness in children, demonstrate a rich emotion vocabulary and guide children on the expression and regulation of emotions by the teacher's emotional scaffolding in children (Teaching about Emotions, ESOS). Thus, the teachers strove both to create favourable conditions for rest and to organize space enabling children to learn more about emotions and receive timely recommendations on their regulation. On the other hand, the positive relationships between the ESOS Subscale Teaching about Emotions and the result on the DTS scale allow us to assume that the teacher discussed opposites and contradictions with children, as well as processes in their development and cyclicity, and children had the opportunity to change the object environment. This result is consistent with Sheridan's findings that high quality classrooms integrate educational activities and interactions (Sheridan, 2009).

A high quality rating is positively correlated to Modeling of Emotional Expressiveness (ESOS) when the teacher provides good examples of expressing emotions and comments on positive examples of the expression of emotions. The teachers develop a culture of support, empathy, and positive outlook among children; create situations in which children can share feelings; encourage children to evaluate examples of expression of emotions, and use play methods to develop expressiveness. At the same time, modeling of expressions of emotion is also related to the creation of conditions by the teacher for the examples of dialectical thinking support described above.

Thus, in our study, we found that high classroom quality is positively correlated to the teacher's support of emotional scaffolding in children. This support of emotional scaffolding, in turn, is closely related to the interactions of the teacher with the children, during which contradictions are solved, situations are considered as they develop, and the object environment of the child is not static. Based on the results of an earlier study on the correlation between ECERS-R and the scale of Dialectical Thinking Support (Veraksa, Shiyan & Sviridova, 2019), we can assume that the Dialectical Thinking Support scale makes it possible to clarify how, in groups with a high quality educational environment, teachers build methods of communication and effectively organize the environment.

A limitation of this research is that the analysis of environmental conditions occurred within kindergarten centres that all implement the same unified educational program. In future research, it will be necessary to study how the Scales' indicators are related to each other depending on various program objectives.

5. Conclusions

The results of this study confirmed our hypotheses that in kindergarten groups with higher classroom quality, teachers more often support the emotions of children. Furthermore, in kindergarten groups
where teachers support the development of dialectical thinking, they are also, often, developing emotional scaffolding in their children as well.

6. Recommendations

The results of this study may be useful for developing recommendations for teachers to improve the effectiveness of emotional scaffolding by 1) organising a space in which a teacher can lead training in recognising emotions, using game methods; 2) creating conditions for discussions of opposites, including in emotional manifestations and emotions in the process of developing (Krasheninnikov & Krasheninnikov-Khait, 2020).

Funding: This research was funded by RUSSIAN FOUNDATION FOR BASIC RESEARCH, grant number 19-013-00475

Conflicts of Interest: The authors declare no conflict of interests

References


