

Reggio Emilia Inspired Learning Groups: Relationships, Communication, Cognition, and Play

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Abstract A key aspect of the Reggio Emilia inspired curriculum is a learning group approach that fosters social and cognitive development. The purpose of this paper is to investigate how a Reggio Emilia inspired learning group approach works for children with and without disabilities. This study gives insight into how to form an appropriate learning group including the effective ratio between children with and without disabilities, the teacher expertise required and other supporting strategies for children with special needs to function more positively in a learning group approach. This study employed both qualitative and quantitative data analysis to code selected videotaped learning group sessions. Findings indicated that across the five children, four children developed in the areas of relationship, communication, and play skills. Children within the learning group exhibited increased interest, inclusion, friendship, and empathy toward both children with special needs. In addition, facilitating high quality learning groups requires intentional planning, reflection, and engagement from children and teachers.

Keywords Reggio Emilia learning groups · Inclusion · Preschool · Children with disabilities

Introduction

Educational Documentation and *Progettazione*

The distinguishing feature of the Reggio Emilia approach in the education of young children is the extensive use of educational documentation to adaptively facilitate the learning processes of children. The Reggio Emilia approach consists broadly of two parts. The first part involves the design of an initial learning environment rich in materials and possibilities. The second part involves observing and documenting the children's learning encounters (interaction with the learning environment) in order to build on the learning progression in-depth. This strategy of documentation guides custom planning, teaching and learning as opportunities take shape by means of *Progettazione* (long-term projects) (Reggio Children 2010). *Progettazione* can evolve from an idea or problem posed by one or more children through either a chance event or an experience initiated directly by the teacher.

The process of designing a *Progettazione* involves: transcribing children's remarks and discussions, photographing their activities, and constructing models and other abstract representations of children's thinking and learning. The gathered data and constructed learning models are carefully reviewed, interpreted, and updated throughout the learning and teaching process. This process provides a structured and disciplined way to allow teachers to construct hypotheses and predict (project) the direction in which the work and experience with children will go as function of the children's stimuli (e.g., changes in learning environment). This process is a core practice of the emergent inquiry approach in which effective planning emerges from co-construction by children, teachers, and the environment (Broderick and Hong 2011).

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To develop a *Progettazione* topic plan in-depth, the involved adults must carefully study the intent and identify from behind the questions posed by the children and invent ways to expand them into productive long-term learning experiences. This “adaptive” project planning process is typically carried out by documenting learning encounters (physical interaction with environment and dialogue with peers) and inventing new questions for children to explore as part of their learning journey. The length of a project varies based on the continuous synergy between the organization of the work and the educational research taking place.

Once the *Progettazione* topic is chosen, teachers and the rest of the pedagogical team proceed to study the different considerations in potential work group structures. In the context of the present discussion, a work group is implied as an initial group of the children placed together in a common learning activity. The Reggio Emilia workgroup concept is based on and defined by the value of relationships, exchange, and co-responsibility within a formed learning group (Reggio Children 2010). The transition of a work group to a learning group is of paramount concern to Reggio Emilia educators. Reggio Emilia educators believe that much of the children’s learning occurs and is significantly affected by their participation and role within a formed group. Therefore, significant effort is put into understanding and/or designing an appropriate workgroup structure.

Reggio Emilia educators extensively study how the work group transitions to a learning group. They base their assessment of group formation and function on both acquired and historic documentation data. A premise of the approach is that systematic and purposeful documentation of ways in which groups develop ideas, theories, and understanding is fundamental to the meta-cognitive activity, and this is critical to the learning of individual as well as of the group. For example, it is important for children to form models of the understanding of their peers in order to help one another reach their common learning goals (Krechevsky 2001). Reggio Emilia educators see the group as a way to foster individual competencies and discoveries such as the uniqueness of each member’s contributions and benefits acquired from the interaction of the group. Ideally, teachers will thoroughly plan when and how to scaffold target children during peer interactions, while at the same time facilitating opportunities to develop high-level thinking skills while conducting the *Progettazione*. This study is a first attempt to understand what aspects of the Reggio Emilia learning group indicators, such as relationships and co-construction of knowledge among the children, can be applied to group of children with and without disabilities.

The Reggio Emilia Learning Group Approach: Learning as a Process of Individual and Group Construction

In school, through both circumstance and design, children form groups all the time. It is important to note, however, that not all groups become effective functioning learning groups. With respect to the formation of these groups, a teacher’s greatest hope is that the groups of children that form can: collaborate to solve problem, learn to communicate their ideas, and think critically in group settings. Given the importance of learning that occurs in the context of a working group, a topic of interest is whether or not the critical benefits of group learning will occur. Another related open question of considerable debate is when and in what situations are ideal to employ an individual versus a group structure.

At present, research in areas related to the Reggio Emilia learning group approach is of considerable interest, but sparse. One notable research effort in group learning is the Making Learning Visible (MLV) project conducted by Giudici et al. (2001) at the Project Zero Harvard Graduate School of Education. The MLV project has studied the Reggio Emilia’s learning group approach more than a decade and has shared insights about how to promote individual and group learning in the classroom. The MLV study was focused on looking not only for more information and understanding of the benefits to children in learning in groups, but on how much and in what ways individual children were enriched or conditioned by specific types of group dynamics. This is crucial information in addressing questions such as, what conditions must exist to make a group into a learning group?

According to Giudici et al. (2001), becoming a group and forming a group identity are integrally tied to both the knowledge and understanding possessed by each individual in the group as well as the knowledge and understanding that is commonly possessed by every member of the group (and thus the group as a whole). The MLV studies indicate that it is truly difficult to understand the ingredients that make a group of children into an effective learning group. However, Krechevsky and Mardell (2001) defined a learning group as: “a collection of persons who are emotionally, intellectually, aesthetically engaged in solving problems, creating products, and making meaning—an assemblage in which each person learns autonomously and through the ways of learning of others” (p. 285). Thus, attention must be directed to each individual’s ability to scaffold the learning of others.

Krechevsky (2001) outlines seven propositions. There are six factors within the first proposition covering the formation of learning groups, including: group size, age, gender, competencies, interest, friendships, and time spent together, and materials chosen for engagement. When

teachers design a learning group, many questions regarding its composition arise: (1) should children be in groups with established friends or should they split up; (2) should children in the group be of similar or different age (age distribution); (3) what is the optimal size of a small work group; (4) should members of the group initially possess similar or disparate interests.

Propositions two through six focus on the overall scope of the learning group and the last proposition focuses on understanding of learning. Examples of indicators across these propositions include, “physical distance/proximity, expressing verbal statements in the first person plural, using different aspects of body...” (p. 255). The last proposition encompasses eight indicators that present evidence that a learning group is working effectively. Across this proposition some indicators mentioned were, “children know that different ideas can coexist, individuals can monitor their own thinking, children and adults use a language of thinking and emotion...” (p. 258–266). Reggio Emilia has inspired learning group indicators that challenge American educators to think about how teachers can support and deepen the quality of learning that occurs whenever individuals are together in groups.

Children with Special Needs and Learning Groups

One facet of the Reggio Emilia approach is the integration of children with disabilities. This characteristic is also similar to Reggio Emilia inspired early childhood programs (Katz and Galbraith 2006; Vakil et al. 2003). These programs provide opportunities for growth and development across all developmental domains through relationships with peers, constructive environments, inquiry-based projects, and documentation of learning. However, research has shown that just placing children with disabilities in an inclusive early childhood classroom, Reggio Emilia inspired or not, does not guarantee a benefit to all children enrolled without the support of the teacher (Beneke and Ostrosky 2015; Donegan et al. 2005; Gribling 2011).

In Reggio Emilia learning groups, every member is viewed as being a valuable member of the group with something meaningful to contribute. Every member can be an expert at something within the scope of the needs of the group. It is the role of the members of the group to identify and/or develop that value in each other. One of the roles of the teacher is to help children within a group recognize this value in each other as well as respect their differences. The children with and without disabilities learn to respect differences between each other. While at one time, peers may have viewed the child with a disability as being “different,” throughout the process they learn that everyone has a meaningful contribution to make their group successful

(Edmiaston and Fitzgerald 2000; Harris and Gleim 2008; Harte 2010).

Reggio Emilia early childhood programs promote the potential of all children and their rights to relationships, autonomy, creativity, and learning. The image of the child is that every child is both a capable and an active participant in learning, irrespective of their needs. Therefore, Reggio Emilia early childhood programs recognize the priority rights of children with special needs to the same education as their typically developing peers (Edmiaston and Fitzgerald 2000; Edwards et al. 2012; Soncini 2012). The Reggio Emilia community has put forth the assertion that the goals for both children with special needs and typically developing children have fundamental similarities (Soncini 2012).

Teacher support across Reggio Emilia inspired early childhood programs should be part of the everyday practice. Teachers are facilitators of learning as well as researchers along with children (Edwards et al. 2012). This support provides opportunities for children with varying abilities to be part of the projects, which are child-initiated (Beneke and Ostrosky 2015; Katz and Galbraith 2006). Being a true member of the project-team allows all children to contribute to the group. This membership helps to build on the strengths of all children based on their abilities and comfort level within the group.

There are numerous learning group approach studies that describe effective learning and relationship building among groups of children. However, there are few studies describing how a Reggio Emilia inspired learning group approach works amongst children with and without disabilities. The purpose of this study is to examine how a Reggio Emilia inspired learning group supports the development of children with and without disabilities in the areas of relationships, communication, cognition, and play skills. Specifically, the following three research questions were addressed by analyzing videotaped sessions of a learning group:

1. How does a Reggio Emilia inspired learning group affect children’s relationships and communication skills?
2. How does a Reggio Emilia inspired learning group promote children’s higher-level cognitive skills?
3. How does a Reggio Emilia inspired learning group promote children’s collaborative play skills?

Method

This study utilized a mixed method approach to collect and analyze data. This approach allowed the researchers to capture the intimate interactions across dyads (qualitative) and the growth the children made over the data collection

period (quantitative). Each learning group was video-recorded. According to Graue and Walsh (1998), video-recording children's interactions significantly benefits data collected in studies. Observational data were used to assess children's engagement with peers and adults (qualitative) within a learning group. Researchers independently recorded children's statements and interactions with peers and adults. In addition, researchers developed a coding sheet to guide their observations of the video-recorded data. Quantitative data were obtained by using the coding sheet and analyzing the results. Utilizing a mixed method approach allowed for valid and reliable analysis of the data.

Play Context and Participants

Play Context

The learning group consisted of 14 sessions taking place weekly over approximately 6 months. The learning group met on Fridays, starting on October 18, 2013 to April 11, 2014, for 1 h in a separate environment from their classroom.

Participant Selection

Children (pseudonyms are used for confidentiality) were purposefully selected by their classroom teacher in a Reggio Emilia inspired early education program. Children were all enrolled in the same pre-K/K classroom, three children enrolled in pre-K and two in kindergarten. Three children were typically developing and two children with special needs participated in the learning group. Anthony* is a five-year old Caucasian male, with no disability. He was enrolled full-time as a kindergartner in the pre-K/K classroom. He was recommended by his teacher because she had concerns that he was a follower in the classroom and wanted to provide him an opportunity to be a leader. He displayed strong empathy skills for other children. Also, his parents wanted him to be a part of this group. His mother wanted him to be a good citizen of the world. Charles* is a five-year old Caucasian male, who was identified with Pervasive Development Disorder-Not Otherwise Specified (PDD-NOS). He was enrolled full-time in a pre-K/K classroom. His teacher recommended him to participate in the project because he seldom engaged in classroom activities. His teacher also indicated that he had not developed reciprocal relationships with other children in the classroom. Jad* is a four-year old Middle Eastern male, with no disability. He was enrolled full-time as a kindergartner in the pre-K/K classroom. He was recommended by his teacher because he had great construction skills with blocks and other materials. She chose him because he has a connection with Charles and hoped it would help engage

Charles more within a small group setting. He was able to interact with Charles on his developmental level. At the time of the study Jad had not made a connection to the classroom project that was taking place. The classroom teacher was hoping that the playgroup would capture his interest and focus. Theo* is a four-year old Caucasian male, with no disability. He was enrolled full-time as a preschooler in the pre-K/K classroom. His teacher identified him as a leader in the classroom. He displayed strong social skills and had the ability to include other children joining in play and other activities. Victor* is a five-year old Caucasian male, identified with a speech delay. His teacher selected him for this project because she found him having difficulty engaging with the project taking place in the classroom and connecting with peers in a large group setting.

A female teacher with an early childhood teaching certification and 10 years teaching experience within the inclusive Reggio Emilia inspired early childhood program led the learning group. Throughout the sessions analyzed she partnered with other adults (male and female) to provide additional adult support. For example, a student teacher (male) and the education specialist joined the learning group sessions. The teacher designed the environment, made observations, and documented children interactions during each videotaped session. Special focus was given to the two children with special needs on what would encourage them to engage more with the other children and with the materials.

Instrument Protocol

Researchers developed a coding system (see "Appendix") to guide their observation of the learning group sessions. The coding system addressed five domains: formation (2 indicators), relationship (7 indicators), communication (7 indicators), cognitive skills (12 indicators), and play disconnection/disruption (8 indicators). Items were developed based on propositions about and indicators of Reggio Emilia inspired learning groups (Krechevsky 2001). Items for the play disconnection/disruption domain were drawn from the Penn Interactive Peer Play Scale (PIPPS), which is a rating instrument that can be completed by a child's teacher or parent to understand the child's peer play behaviors (Mcwayne et al. 2002). The items judged to be applicable to the learning group were selectively used in this study. Using this coding system, each child was observed for a 5 min interval across 15 min. The observers placed a check mark in the appropriate column to indicate whether each indicator was observed at least once during the 5 min interval.

After developing the coding system, a practice analysis was performed to ensure that interrater reliability among the three observers was acceptable. One of the learning

group sessions was randomly selected and analyzed. For this practice analysis, interrater reliability agreement was calculated at 76.9 % for the overall scale, and the Kappa value, the proportion of agreement correct for chance, was .53 indicating a moderate strength of agreement (Cohen 1960; Viera and Garrett 2005). Modifications to the coding system were made based on coder discussion regarding applicability and repetitiveness of some items.

Data Collection

Upon IRB approval and parental informed consent, data were collected over 6 months resulting in 14 video recorded sessions. Researchers analyzed seven 15-min sessions (across 5-min intervals), which consisted of 40 percent of the entire data available for analysis. These sessions were selected because they were least likely to have technical issues, such as observable video quality, volume of audio, as well as attendance of all participants. Using the researcher-developed coding system described above, each of the three researchers independently coded the videotaped data.

Data Analysis

Overall percent of agreement was 75 %. The Kappa values for the relationship, communication, and play categories scored at .50 (ranging from .42–.56). The interrater reliability for the cognitive skills domain was (Kappa = .28). Challenges with regard to quantifying children's levels of engagement in higher-level cognitive tasks will be discussed in the limitations section. The Kappa value for the overall scale was .47, indicating a moderate agreement among the observers (Cohen 1960; Viera and Garrett 2005). The obtained ratings were then analyzed to examine if there were any significant changes or growth patterns over the project period in terms of children's communication, cognitive, and play skills as well as their relationships. Specifically, for each of the four domains, the average number of yes responses among the three observers was calculated for each session and for each child participant.

In addition to the analysis of the quantitative ratings, the researchers qualitatively analyzed the video-taped data of the selected sessions and yielded common responses and interactions amongst children and adults from the observation data. Observational data amongst the researchers were highly consistent across direct responses and interactions.

Results

The study investigated the processes involved in developing and supporting children's relationships and their communication, cognitive, and play skills among the children

with and without special needs in a learning group. Reggio Emilia educators have noted that the amount of time that children spend together in a learning group influences the ways they come to know themselves and others (Krechevsky 2001). The results illustrate the similar pattern with the Reggio Emilia learning group study.

Impact of Reggio Emilia Inspired Learning Group on Relationships

Relationship skills were observed across interactions with adults and peers. The indicators in this category included physical proximity, play skills, and acknowledging self and peers in the group (see "Appendix"). Three children showed consistent scores across the indicators in the relationship category. During the first session children were taking time to become familiar the setting, peers, and adult leading the playgroup. As sessions continued, the children felt more comfortable in the playgroup environment, thus sitting closer to each other and showing positive emotions towards each other. For example, the children increased their physical proximity when playing with materials and showed common interest in learning to tie up animals with the string.

This figure represents the average number of yes responses among the three observers for each session and for each child. Possible values range from 0 to 21. Data for Jad in sessions #6 and #7 are missing because he attended these sessions partially. As seen in Fig. 1, data indicated that in this category, two of the five children showed changes across the sessions. It should be noted that both children were identified with a disability. One child (Charles), showed promise in his ability to adapt to a new environment during the first session. However, he displayed a decline in the category of relationship across indicators. For the other child, Victor, relationship indicators were more frequently observed for him after the first session. The unfamiliarity of the environment and purpose of group may have led to his reluctance to engage during the first session. In following sessions, Victor was able to

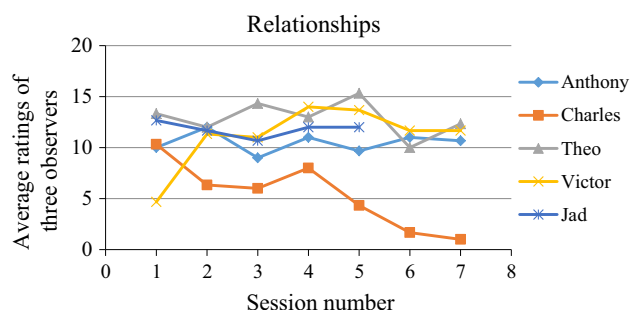


Fig. 1 Average ratings of relationships category

share his expertise in making knots with strings, modelling for his peers and supporting their efforts to tie, developing children's admiration for his knowledge and skill set. In contrast, Charles continued to decline in this category even with ongoing invitations from adults and peers. He preferred to stay on the periphery of the group, observing and making comments.

Impact of Reggio Emilia Inspired Learning Group on Communication Skills

Communication skills were observed across verbal and non-verbal attempts with adults and peers. The indicators in this category included listening, commenting, asking questions and engaging in back-and-forth conversations (see "Appendix"). The possible values for the communication skills category ranged from 0 to 21. Again, data for Jad in sessions #6 and #7 are missing because he attended these sessions partially. Data presented in the figure below show that, across the seven sessions of analysis, communicative attempts increased for four out of the five boys. Evidently, the more sessions the children had the opportunity to listen to one another, ask questions, and engage in back-and-forth conversations, the more readily communication exchanges took place. For example, Theo explained, "I got it guys! I trapped him, now he's in the jail. This is the jail. The jail for the bad guys."

Similar to the relationship category one, (Charles) made little to no progress in the communication category. The other child (Victor), began the first session with the lowest communicative attempts, however, his communication skills increased to the same level as the other boys who easily engaged in communication throughout the playgroup sessions. Data presented in Fig. 2 below shows that across the seven sessions of analysis communicative attempts increased for four of the five boys.

A learning group may operate according to a shared understanding that everyone is allowed to express an opinion or elaborate on a theory while discussing a particular topic. Children expect other members of the group

to say what they think. If someone does not talk, the others encourage that individual's contribution. Children learn to see themselves as contributors to the group when everyone is engaged, whether using verbal or body language.

Impact of Reggio Emilia Inspired Learning Group on Cognitive Skills

Children learn to see themselves as thinkers with different points of view. Learning groups allow children to display their cognitive skills when engaged in meaningful play. Cognitive skills were observed across verbal exchanges, engagement with materials, and creative displays from children. Some indicators in this category included expressing ones' thoughts and ideas (theories), building on ideas from peers, knowledge negotiation, and problem solving (see "Appendix"). Data presented in Fig. 3 below shows a random display of cognitive skills throughout the seven sessions. This figure represents the average number of yes responses among the three observers for each session and for each child. Possible values range from 0 to 36. Data for Jad in sessions #6 and #7 are missing because he attended these sessions partially. Overall, the children often engaged with materials, expressed their own ideas and thoughts, used their creative imaginations in play. In comparison to the other children, (Charles's) demonstration of cognitive skills was rarely observed.

In addition, indicators reflecting cognitive skills were further analyzed (see Fig. 4). This figure represents the average number of yes responses among the three observers for each indicator and for each session. Possible values range from 0 to 15. For sessions #6 and #7, the maximum possible value is 12 due to the absence of one child participant in these sessions.

A description of each item can be found in "Appendix". On average, indicators that were frequently observed included engaging with materials (average frequency (M) = 12.05), expressing his/her own ideas (M = 9.05), and being creative in making up play (M = 7.57). Indicators that were less frequently observed in this learning

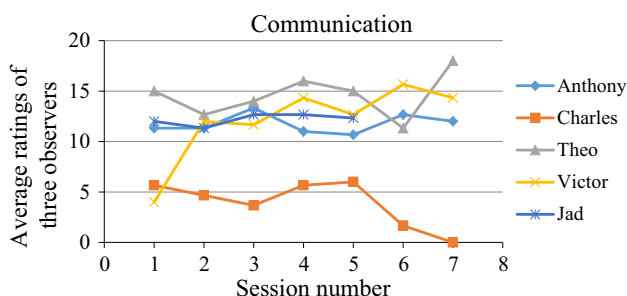


Fig. 2 Average ratings of communication skills category

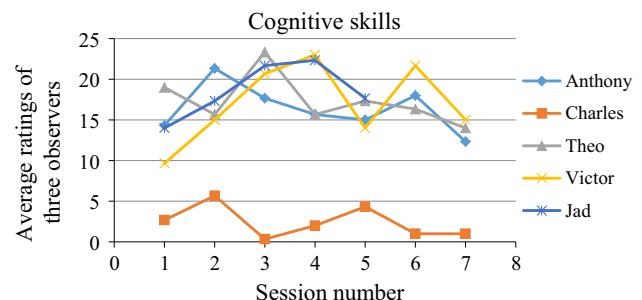
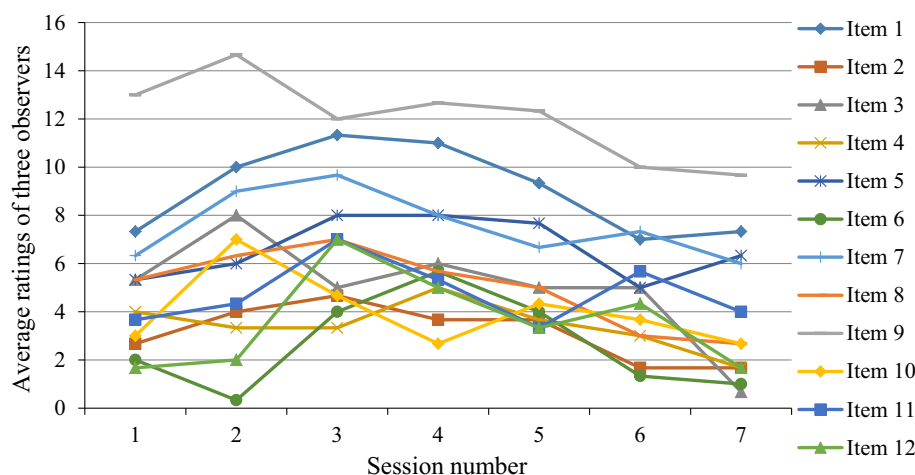


Fig. 3 Average ratings of cognitive skills category

Fig. 4 Representations of children's cognitive skills across indicators



group included viewing knowledge construction as a constant process of negotiation and reflection ($M = 2.62$), evaluating own work/group work ($M = 3.57$), and making modifications to his/her own theory ($M = 3.15$).

These findings indicate that children were unable to reach a higher level of thinking skills, such as making modifications to his/her theory or building on others' ideas.

Impact of Reggio Emilia Inspired Learning Group on Play Skills

The children's play skills were examined with a focus on their play disruption and disconnection behaviors. The indicators of play disruption included rejecting play ideas of others and being disruptive during peer play and interactions. Some indicators related to play disconnection included wandering aimlessly, refusing to play when invited, needing help to start playing, and hovering outside the learning group (see "Appendix"). Figure 5 represents the average number of yes responses among the three observers for each session and for each child. Possible values range from 0 to 24. Data for Jad in sessions #6 and #7 are missing because he attended these sessions partially. As shown in the figure, for three out of five

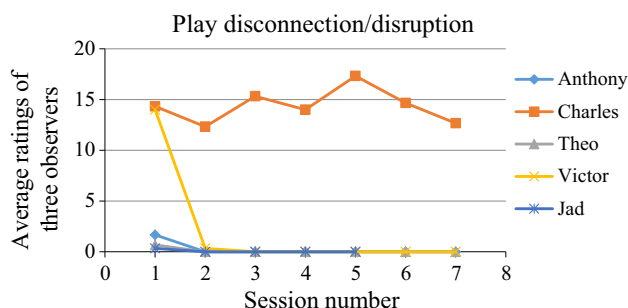


Fig. 5 Average ratings of play disconnection/disruption category

children, their play disconnection/disruption behaviors were rarely observed across the seven sessions. One of the children with special needs (Charles) displayed withdrawal behaviors consistently throughout the sessions. This child needed adult or peer support to be engaged in peer play and interactions, and he often refused to play when invited. The other child (Victor) was not engaged in play during the first session, and he displayed disconnection behaviors just as frequently as Charles in this session. However, as he found his interest in the learning group's project ideas, he became highly engaged in the following sessions. His withdrawal behaviors were rarely observed in the subsequent sessions.

Discussion and Limitations

Our study gives insight into the potential competencies displayed by children when engaging in a Reggio Emilia inspired learning group. Areas that were more prominent in representation from children included: developing relationships, communicative abilities, and play skills. Observations indicate that all children benefited from participating in the Reggio Emilia inspired learning group approach. In accordance with Giudici et al. (2001) study, all students contributed to the learning group based on their abilities. Promoting participation in the learning group relies upon the teachers' ability to prepare a learning environment that is nurturing and inviting, identifying a topic of true interests to all children, selecting quality materials, and including oneself as a critical researcher and facilitator of the group.

There was significant improvement in social and play engagement in one child with special needs. Although the other child with special needs did not show overall improvement in the areas observed, he did appear to enjoy

being around the other children based on his temperament. Other children within the learning group exhibited increased interest, inclusion, friendship, and empathy toward both children with special needs.

However, one of the categories in which many of the students did not display improvements in skills was the area of cognition. These indicators proved to be most challenging to facilitate without deep understanding of how to scaffold children's thinking and reflection. Given that this study only focused on children's responses, behaviors, and interactions over time, more attention in the future should address the role of the teacher in the learning group. In addition, evaluating and quantifying cognitive skills through the indicators identified were a challenge, thus this study was unable to capture this area adequately. This is an area in which future research can be developed.

There are several aspects of this study that contribute to the literature; however, there are limitations that need to be addressed. First, limitation lies in the instrument protocol. This was developed by the researchers, but needs further development, utilization, and generalization. As stated earlier the coding system addressed five domains: formation (2 indicators), relationship (7 indicators), communication (7 indicators), cognitive skills (12 indicators), and play disconnection/disruption (8 indicators). Do the indicators adequately correspond to the domains? What characteristics in adults and children support the facilitation and representation of these domains and indicators? In particular, challenges existed as to evaluating the presence of indicators in the cognitive skills domain. The relatively low interrater reliability for this domain implies that the researchers did not often reach agreement in terms of whether each of the cognitive indicators was observed in the learning group. Many of these cognitive indicators emphasized in Reggio Emilia inspired classrooms were not easily quantifiable as visible or non-existent due to the abstract nature of thinking processes. One way of improving the cognitive domain of the instrument protocol would be to provide a more specific and observable description for each indicator. In addition, qualitative observations and analysis may be particularly insightful to

understand children's utilization of higher-level cognitive skills.

Given the focus of this study was on children, another limitation was the exclusion of teacher effect on child responsiveness and engagement. The researchers took into consideration group size, age of children, gender, and interests of children, but not teacher transference classroom practice. It was evident that the teacher needed ongoing coaching throughout the learning group sessions in facilitating an environment that captured the interests and ability level of *all* children. The facilitator of the learning group must have the disposition, skills, and reflective practice in order to develop metacognition, curiosity, dialogue, visible thinking, integrated inclusive play, and problem solving. In order to better capture teachers' thinking, more structured ongoing reflection must also be in place.

When considering and designing a Reggio Emilia inspired learning group, one must take into consideration the ratio between children with and without disabilities, teacher expertise and disposition, environmental arrangement, materials, and other supports needed for children with disabilities to function more positively. Children's interests are a key component to the success of the child's overall social and cognitive development, thus must be included in the planning and reflection of a Reggio Emilia inspired learning group. In addition, teachers seeking to implement a Reggio Emilia inspired learning group must have a deep understanding about how to facilitate children's thinking and create an environment that lends itself to research, problem solving, and group interactions. The outcomes can impact both children with and without disabilities developing authentic friendships and caring, cooperation and collaboration, and communication and openness, resulting in the inclusion of everyone.

Appendix: Reggio Emilia Inspired Learning Group Coding Instrument

See Table 1.

Table 1 Reggio Emilia inspired learning group coding instrument ©

	5	10	15	20	25	30	Comments
1. Formation							
1.1. Group size							
# of children, # of adult							
1.2. Gender							
adult male is present							
2. Relationships							
2.1. Physical proximity							
close contact or touching							
2.2. Expresses verbal statements in the first person plural							
e.g., We can do this. Let's do this.							
2.3. Shows positive emotions during play/use humor							
smiles, laughs, claps approvingly, attentive							
2.4. Encourages others to join play							
welcomes, invites play partners							
2.5. Helps other children							
physical help (e.g., ties shoes, opens milk, loosens block)							
2.6. Watches others play							
2.7. Initiates interaction with adult							
3. Communication							
3.1. Listens to the ideas of others							
attentive while others are speaking							
3.2. Comments on other children's ideas or theories							
responds to peers' thoughts and ideas							
3.3. Asks questions to the group							
ask questions							
3.4. Expresses verbal statements in the first person							
uses "I" statements.							
3.5. Uses different aspects of body language to invite participation gestures, facial expressions, tone of voice							
3.6. Communicates with adult							
3.7. Engages in a dialogue							
back-and-forth conversations							
4. Cognitive Skills							
4.1. Expresses his/her own theories/ideas							
verbally/graphically/physically explains thoughts							
4.2. Makes modifications to his/her theory							
give an update to ideas							
4.3. Introduces new topics/ideas to the group							
verbally shares ideas							
4.4. Makes suggestions							
4.5. Knows that different ideas can coexist with their own ideas							
acknowledges others' ideas							
4.6. Views knowledge construction as a constant process of negotiation and reflection							
rethinks strategies/ideas to improve work/projects							
4.7. Creative in making up play							
imagination is seen when acting out							
4.8. Builds on ideas that come from any individual or group							

Table 1 continued

	5	10	15	20	25	30	Comments
4.9. Engages with materials							
4.10. Models for others							
both intentional and unintentional							
4.11. Uses problem solving skills							
figures out solutions							
4.12. Evaluates own work/group work							
determines the quality of work/projects							
5. Play disconnection/disruption							
5.1. Is ignored by others							
not listened to							
not included in play							
5.2. Wanders aimlessly							
not engaged in a purposeful activity/play							
5.3. Withdraws							
removes self from activity							
5.4. Refuses to play when invited							
5.5. Needs help to start playing							
waits for adult/peer support or encouragements							
5.6. Hovers outside play group							
observes group play, does not participate							
5.7. Rejects the play ideas of others							
5.8. Is disruptive during play and interactions							
seeks negative attention (e.g., yells, removes toys, interferes with the flow children's play)							

Adopted from Penn interactive peer play scale (PIPPS) (Mcwayne et al. 2002)

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