

Science education in preschool: How to assimilate the Reggio Emilia pedagogy in a Turkish preschool**

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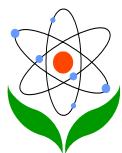
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Abstract

This commentary manuscript, which was part of a larger research project, aimed to show how teachers can help preschoolers construct their knowledge of science and meet preschool science standards successfully in a Reggio Emilia approach. The demonstrations for preschool teachers are summarized as follows: be inspired by

*This commentary article is adopted from Hatice Zeynep Inan's dissertation study entitled "An Interpretivist Approach To Understanding How Natural Sciences Are Represented In A Reggio Emilia-Inspired Preschool Classroom" The Ohio State University. Columbus/OH, U. S. A., 2007, Adviser: Rebecca Kantor.



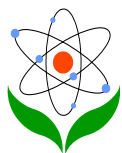
the Reggio Emilia approach; aim higher; take individual needs into consideration; listen to the child; pay attention to shared interests of children; do documentation; balance peer culture and school culture; take action; support “hands-on, heads-on, hearts-on” experiences; be flexible; and properly benefit from the Turkish National Education standards.

Keywords: Reggio Emilia Approach; Reggio Emilia-inspired; Assimilation; Science education; Preschool; Demonstrations

Introduction

Science education in preschool contributes to children’s learning and development (Conezio & French, 2002; French, 2004; Eshach & Fried, 2005; Gelman & Brenneman, 2004; Harlen, 2000; National Research Council [NRC], 2001), supports children’s strong and prolonged interest and curiosity in science (Conezio & French, 2002; Cummings, 2003; French, 2004; NRC, 2001) and encourages children’s competency in science learning (Gelman & Brenneman, 2004; MSEB/CFE, 2005; NRC, 2001). The Reggio Emilia philosophy is very compatible with preschool natural sciences education in terms of both science content and skills. However, there are very few studies about the integration of natural sciences in Reggio Emilia classrooms. One of the most comprehensive research studies on Reggio science education was conducted by Inan in 2007. This commentary manuscript and demonstrations for preschool science teachers are derived from Inan’s dissertation research on natural sciences education in a Reggio Emilia-inspired preschool classroom and re-examined considering Turkish preschool education system and Turkish national education standards.

Before stating how to assimilate the Reggio Emilia approach, it is essential to understand this pedagogy and the background of the emergence of the approach in Italy. The history of the Reggio Emilia schools in Italy goes back to the mid-twentieth century, just after the end of the Second World War (Malaguzzi, 1998). Malaguzzi indicates that citizens and parents in the town called Reggio Emilia volunteered to build the first Reggio Emilia school. Malaguzzi states that it was a great community action with the strong desire of citizens for new educational system for their children after 20 years under the fascist regime. He continues, “The municipal government was increasingly determined to institute more schools to satisfy the emerging needs of children and families” (p. 53). Malaguzzi states that while the Reggio Emilia teachers were benefiting from the ideas of distinguished



theorists (e.g., John Dewey, Jean Piaget, Lev Vygotsky, Erik Erikson, Urie Bronfenbrenner, Henri Wallon, Edward Chaparede, Ovide Decroly, Anton Makarenko, Pierre Bovet, Adolfe Ferriere, and Celestine Freinet), they were also strengthening their belief in an active education, pluralism among children, and an education free from the dominance of the Fascist regime.

What makes the Reggio Emilia approach special and unique among other preschool curricula is its cultural and historical background, as discussed above, and its principles as follows:

The child's image: The child is intelligent, strong, beautiful and ambitious (Malaguzzi, 1994);

The teacher's role: The teacher plays a wide variety of roles, namely observer, listener, learner, nurturer, partner and provocateur (Rinaldi, 1993), which is different than traditional teacher roles, such as being an expert;

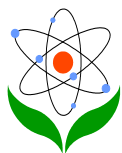
The projected curriculum: The new idea of curriculum, called *progettazione*, stresses importance of long term and in-depth projects developed by the classroom community including teachers and children (Rinaldi, 1998);

The Documentation: It supports rich documentation of children's work and progress (Gandini, 2004), which is very different from traditional collections of children's work in terms of its educative function;

The environment: The well-planned environment and intelligent materials are considered as another teacher in the classroom (Gandini, 1998).

Moreover, the Reggio Emilia approach, which is based on strong relationships among children, teachers, parents and the community (Rinaldi, 1998), supports social-constructivist education differing from individualist approaches in early childhood education.

Since the Reggio Emilia approach encourages young children to engage with natural sciences, it was worth examining and exploring it in more detail. Since more preschools are integrating natural sciences and related standards into the classroom life of preschools, the study could contribute to educators' understanding of how to integrate natural sciences into preschool curricula in a Reggio way and help inform the practices of science teacher educators and science educators in general. Accordingly, this manuscript aimed to show how teachers can help



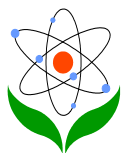
preschoolers construct their knowledge of science and meet pre-K science standards successfully in a Reggio Emilia way.

Next, the Reggio Emilia pedagogy is discussed in terms of its appropriateness for different contexts and how to assimilate it into a preschool. The Reggio Emilia approach has its roots in the unique culture and history of its origin (the city of Reggio Emilia, Italy). It does not provide a packet program or curricula, but instead an authentic perspective to early childhood education. Accordingly, the preschools in different cities/countries are recognized as being inspired by the approach.

How to assimilate the Reggio Emilia pedagogy in a Turkish preschool

Prior research examined the appearance of natural sciences in preschools inspired by the Reggio Emilia approach and discussed how it can be *adapted* into an American context. For example, Savoye (2001) indicates that, “critics complain that Reggio is too complex to implement” (p. 2). There is a misconception about being inspired and implementing something. The Reggio Emilia approach is not a predetermined program to implement. Similar misconception appears in Desouza’s statement (1999) that, “adapting the Reggio approach in the school curriculum in the United States is not an easy task” but a challenge (p. 8). Maybe the problem is trying to adapt the Reggio Emilia approach. Kathy, the preschool teacher in the Reggio Emilia-inspired preschool, said, “We are Reggio inspired. What that means, the whole point of that is that, we reinvent ourselves. So whoever is inspired by this approach, it requires that you do not adapt them, but reinvent yourself.” She also stated, “There is not a pathway of being part of Reggio Emilia.” The Reggio Emilia approach proposes the most appropriate early childhood education approach for any classroom, because it is about assimilating the principles into your own, unique context. There is no right or wrong way to be Reggio Emilia-inspired, but assimilating the Reggio principles and living in your own world with your own realities. So it cannot be difficult.

Although the experiences would be different in each community, the pedagogical principles driven from the Reggio Emilia approach would be common, such as children’s interest as the driving force in natural sciences education. As evidence shows, it is possible to have the classroom practices in the Reggio Emilia-inspired preschool consistent with the Reggio Emilia principles (the image of the child, education based on relationships, the role of the teacher, progettazione, inquiry-based education, documentation, the role of the environment and materials



and the hundred languages of children). The results of Inan (2007)'s research indicated that the teachers in the Reggio Emilia-inspired preschool created a science-rich context of social-constructivist and inquiry/interest-based education where children's knowledge of natural sciences and skills could be nourished. The Reggio Emilia-inspired teachers provided the preschoolers a context where they pursued their inquiries and interests in the natural sciences, learned about the content, used science process skills and actively and cooperatively engaged in science processes. This was not a linear, simple, predetermined process, but very complex and happened in multiple ways like a spider web.

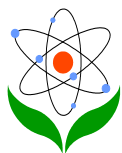
Being Reggio Emilia-inspired, the teachers in Inan's (2007) study stated their interest in reflecting their own community's culture and expanding the worlds of their own children. They indicated that the Reggio Emilia approach provided them the freedom of innovation; in other words, the ability to create their own unique Reggio Emilia approach in their unique classroom, and thus the ability to reinvent themselves. Accordingly, this allowed them, in some ways, to be different from the Reggio Emilia schools in Italy. While they were inspired by the principles of the approach, they were also, for example, more individualist.

Demonstrations for early childhood educators and science teachers

Be inspired by the Reggio Emilia approach! Appropriating the approach into one's own context enables teachers to reinvent themselves and extend their own children's lives in a meaningful way without importing artificial, out of context prescribed science curricula. Accordingly, assimilating the Reggio principles (the image of the child, education based on relationships, the role of the teacher, progettazione, inquiry-based curriculum, documentation and the role of the environment and materials) in your context can give children opportunities to construct their knowledge of science while interacting with others.

Aim higher! There is no need to worry about meeting standards or a prescribed formula when following children's interests and inquiries within the framework of the Reggio Emilia principles. Standards are limited so that they should not



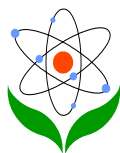


become a set of criteria that teachers follow and create curricula. The teachers should aim higher and should be careful about challenging children at their own level, not a level prescribed by so-called experts. It is also necessary to remember that the child is intelligent, strong, beautiful and ambitious (Malaguzzi, 1994). Teachers should aim higher with such strong image of the child, rather than aim lower with the traditional child image, which is weak and needy.

Take individual needs into consideration! Teachers need to conduct necessary accommodations in the classroom to meet individual differences, needs and interests. Reggio Emilia is not about implementing an artificial program into your context. However, it is about growing a curriculum out of your own context, so that individual needs can be met. Standards mostly do not take into consideration the special needs of some children (e.g., disabilities). However, Reggio Emilia provides a context to challenge a child at his or her level instead of standardized criteria or tests. This is more beneficial and fair for ALL children.



Listen to the child! While shaping the curriculum, teachers should be sure that they are following children's interests and inquiries! It is essential to build upon children's interests and inquiries, in order to find the most learning opportunities. Inan (2009a) states that the classroom and the curriculum in Reggio Emilia schools are not static but are responsive to the changing needs and interests of children. She continues, for example, "The teachers were setting up the environment with new materials and tools, changing things/variables at each time" (p. 2515) as seen in the picture below. The picture below demonstrates examples of different sensory table projects over time based on interests of children in a Reggio Emilia-inspired preschool: exploring bugs/insects, measuring things, fishing with magnets, bubble work, exploring sea habitats, water/sticky things and snow animals.

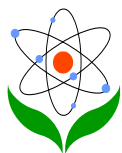


Pay attention to shared interests! While taking individual needs and interests into consideration, it is also essential to pay attention to any shared interests and inquiries of the children. An individual is a part of a community, not just an individual entity.

Do documentation! Teachers should use documentation to enrich children's learning processes, and inform other people about the children's learning and development. However, teachers should never use documentation to judge preschoolers and declare them a success or a failure. This is merely labeling little children, a process which may stigmatize and cause harm. Inan (2009b) states that, "teachers' documentation of children's work is so informative in terms of showing 'creativity' and 'discovery' in the projects that Reggio kids produced" (p. 1377).



Balance peer culture and school culture! Inan (in process) states that while Reggio Emilia-inspired teachers may not target early childhood science education standards, they often meet them as children engage in meaningful, authentic science experiences in project-based, emergent curricula that emphasize inquiry, in-depth understanding, engagement, and group learning. In order to accomplish this in their classrooms, teachers should take both school culture (e.g., general educational objectives) and peer culture (e.g., children's current interest in spiders) into consideration when determining the emerging curriculum. Teachers should be able to turn children's excitement over a topic into a learning opportunity.



Take action! Teachers can rethink their knowledge of child development and revisit their documentation. Based on what appears, they can set up an environment that stimulates children's learning and provides assistance as needed.

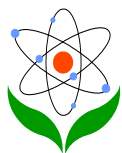


Support hands-on, heads-on, hearts-on experiences! Teachers should consider children's whole development. They should provide a context in which children can follow their inquiries and interests, construct their knowledge of science through hands-on experiences, and have a love of the subject matter.



Be flexible! Teachers should never stop listening to children and always be ready to make curriculum changes any time. As the curriculum emerges, it is essential to make changes according to the shifting interests of the children.

Lastly, Benefit from Turkish national education standards properly! Standards will be beneficial for children and teachers only if they are used properly. Teachers should avoid problems, which are given under limitations of the standards, so that high quality education can be achieved.



Conclusion

The science experiences in a Reggio Emilia preschool cannot be replicated or reproduced because the Reggio Emilia approach is not something to implement. It is a philosophy that teachers can be inspired by. Teachers can appropriate and assimilate the Reggio Emilia approach into what is relevant in their own, unique context. The Reggio Emilia approach proposes the idea that no two schools will ever be alike; what works for a Reggio Emilia preschool will not necessarily work for another Reggio school.

Kantor and Fernie (2003) state, “thinking of classrooms as dynamic and patterned cultures provides a new and useful framework for looking at and understanding what is going on in a particular classroom-the “feel” or personality of the group, why things are either going well or not going well for a teacher or particular children” (p. 211). The experiences in a school belong to its specific classroom community with its teachers, students and families. Even in the same classroom with the same teachers, the investigations and the experiences related to natural sciences might be different with different children in the future, so it is essential to look at the culture of a specific classroom and make decisions accordingly. The NRC (2001) indicates that there is no one best way for an effective early childhood science education, and states that the best technique is to select “the right tool for the right task at the right time” (p. 11). Accordingly, a tool might be right for that task at that time, but an individual child should also be ready or interested in it for effective teaching and learning to take place.

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