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The rural school meal as a site for learning about food

Irene Torres ^{a, b, *}, Jette Benn ^b

^a Fundacion Octaedro, Quito, Ecuador

^b Danish School of Education (DPU), Aarhus University, Copenhagen, Denmark

* Corresponding author. Fundacion Octaedro, El Zurriago E8-28 y Ave. De los Shyris, Quito, Ecuador.

E-mail address: irene@octaedro.org (I. Torres).

Abstract

The aim of the article is to contribute to the understanding of the school meal as a site for learning about food, nutrition and the wider determinants of health in three small rural schools of Ecuador. Based on a year-long qualitative fieldwork, the multiple case study associates Vygotsky's sociocultural theory of learning with Noddings' theory of care to analyze the findings. In the study, elements of care in the relationships between children and adults seemed to promote dialogue and, in this way, adults were able to model what is required to care for others and oneself. This entails that a focus solely on food or limitations on social interaction during the school meal may reduce its learning opportunities. The study concurs with the research that the food is better received when it is more aligned with the students' expectations. In addition, the findings support the view that rural school meal programs should address the views of parents and teachers because of their influence on how the meal is prepared and provided. The article proposes that schools work within a flexible framework emphasizing attention to the caring aspects of the meal, as a means to develop this dimension of the school meal. The study also contends that a collaborative reshaping of conditions formally set by school food policy is consistent with a critical approach to food and nutrition. In connection with this, the study concludes by highlighting the value of revisiting Noddings' perspective of care as deriving from the practice of opening up and meeting the other.

Keywords: School meals, Nutrition education, Rural population, Learning theory, Sociocultural theory, Care

1. Introduction

There is increased global interest in addressing the influence of school meals on the knowledge and competences of students regarding food-related issues. For example, the national school nutrition programs of Finland, Sweden and Japan expect teachers to work pedagogically with school meals to help children develop food and nutrition competences

(Lintukangas & Palojoki, 2016; Persson Osowski, Göranson Fjellström, 2010; Sarlio-Lähteenkorva & Manninen, 2010; Tanaka & Miyoshi, 2012). At a smaller scale, countries like Brazil and Portugal have incorporated educational objectives in school meal programs (Cervato-Mancuso, Westphal, Araki, & Bógus, 2013; da Cunha, de Sousa, & Machado, 2010; da Silva, Schmitz, Rodrigues, & Gabriel, 2013; Porto, Schmitz, Recine, & Rodrigues, 2015; Truninger, Teixeira, Horta, da Silva, & Cardoso, 2013). The school meal provides the opportunity to learn in relation to the different dimensions of food, whether nutritional, culinary, cultural, social, environmental or political (Benn, 2014; Benn & Carlsson, 2014; Janhonen, Palojoki, & Mäkelä, 2016; Morgan & Sonnino, 2008; Weaver-Hightower, 2011). However, thinking of the school meal as a site for learning poses many challenges.

First, improving students' knowledge and attitudes towards nutrition and related health issues requires that the school meal is integrated with the curriculum, as well as providing a supportive school environment and improved communication with parents (Nelson & Breda, 2013). This could demand more resources than available or be perceived as an added burden to the school. Second, the contents or execution of the meal, or the curriculum related to the meal, can produce unintended or undesirable consequences (Phillips & Roberts, 2011). For instance, the positive learning potential of school meals can be diminished if the food is not fully enjoyable (Benn & Carlsson, 2014; Chatterjee et al., 2016). Or, a healthy meal program designed for the majority could give way to adults ridiculing children from an ethnic minority background at school, as it has happened in Denmark (Andersen, Holm, & Baarts, 2015). Studies also show that a national school meal such as the Swedish may have a persistently negative image despite its improvements in quality and taste (Persson Osowski et al., 2010). Third, the perspectives of adults such as teachers, parents and dining staff influence how school meal policy is implemented (Moore, Murphy, & Moore, 2011; Walton, Waiti, Signal, & Thomson, 2010).

Concurrently to these issues, there is growing concern that a pedagogic school meal could take away what little is left as free time at school, as well as impose pre-determined food knowledge and behavior, social practices and culture on students, or emphasize competencies over other aspects of the meal such as its social or sensory dimensions (Andersen et al., 2015; Benn & Carlsson, 2014; Coveney, Begley, & Gallegos, 2012; Evans & Rich, 2011; Gullberg, 2006; Smilie, 2013). The idea of the meal as a free moment seems to resonate with both students and teachers, who may resist joining in a pedagogical meal as defined in countries with a national school meal program, such as Sweden or Finland,

where specific norms related to diet or dining are expected to be upheld and promoted. As research in Finland shows, a number of students may prefer to eat somewhere else at mealtime or socialize with their friends unrestrained by dining rules (Janhonen et al., 2016). In Brazil as well as Sweden, teachers may feel that the meal exceeds their pedagogical duties, and not become involved (Cervato-Mancuso et al., 2013; da Cunha et al., 2010; da Silva et al., 2013; Persson Osowski et al., 2010; Porto et al., 2015).

This study focuses on the social situations within which the students interact with the material environment, including the food and dining conditions, during the school meal. The premise is that the school meal may be approached from Vygotsky's socio-cultural perspective, which views learning as originating in social situations comprised by a child's meaningful interaction with the material environment through human and symbolic mediation (Daniels, 2007; Kozulin, 2002; Vygotsky, 1986, 1994). Vygotsky's theory of learning is associated with Noddings's framework of care to examine the potential or limitations of the school meal for health and nutrition education.

Research on Ecuador's school nutrition policy has argued that the emphasis on academic learning, combined with a reductionist approach to food, disregards the potential of school meals as a site for learning about nutritional and health issues (Torres, 2017). The School Feeding Program (Ecuadorian Ministry of Education, 2012) was introduced in 1980 in Ecuador by the World Food Program, as part of a global nutritional initiative for developing countries. Until 2009, the School Feeding Program delivered staple foods to schools and promoted community participation to plan and prepare lunch for the students, using products grown in the school garden or by local farmers -some of whom were also school parents (World Food Program, 2012). As a result of the WFP's goal of progressively transferring responsibilities to individual states, the SFP in Ecuador became fully funded and operated by the state in 2009.

Around this time, the Ecuadorian government also launched a series of educational incentives aimed at Millennium Development Goal #2, i.e., achieving universal primary education. Additionally to uniforms and textbooks, the Ministry of Education simplified the School Feeding Program in rural areas, providing low-cost refined food supplies including individually packed energy bars, filled cookies and a powdered mix to prepare a warm beverage [colada, in Spanish]. Starting in 2009, the instruction was that the colada be served alongside an energy bar or a pack of cookies as "breakfast" (Ecuadorian Ministry of

Education, 2012; World Food Program, 2012), although given the characteristics of the food supplies it could more accurately be described as a snack. Nevertheless, because the beverage is expected to be warm and may thus involve a more elaborate preparation and even formalized provision, it could be distinguished from the simpler snack as a meal.

According to the research, the School Feeding Program is no longer linked to school gardens or local farmers, and it is the teachers who are generally in charge of the meal, when before the school may have worked together with parents to provide lunch. The program is described as an incentive for school attendance and a nutritional supplement; it does not cite any educational objectives or pedagogical implications (Ecuadorian Ministry of Education, 2012).

The media periodically have echoed the views and complaints of the parents and teachers regarding the lack of diversity in the food, as well as delivery problems including lack thereof and limited time frame between delivery and expiration date of the products - which was recently acknowledged by the government (El Telégrafo, 2016/11/06). Additionally, the research shows that school nutrition policy is focused on monitoring and regulating behavior, based on a bio-medical approach to nutrition and health. However, the research also finds that existing policy in Ecuador, and particularly the school feeding program, offers some opportunities to establish a school-based approach to nutrition and meals in accordance with the principles of critical health education and a health promoting school approach (Torres, 2017; Torres and Simovska, 2017).

A literature review conducted for this study found that there is limited research on school nutrition programs as a site for learning in developing countries. The body of research which focuses on school feeding programs following the World Food Program's model mainly concentrates on the impact of meals on nutritional status or school attendance (Bundy et al., 2009; Pawson, Greenhalgh, Harvey, & Walshe, 2005). With regard to small rural schools, there is limited research related to health education in general and more so with regard to nutrition education in particular. Studies of small rural schools seem to focus on student academic achievement and pedagogy (Antonio & Lucini, 2007; Benveniste & McEwan, 2000; Kline, 2002; Åberg-Bengtsson, 2009) and the school-community relationship (Kalaoja & Pietarinen, 2009; Kinash & Hoffman, 2009; Kline, 2002; Åberg-Bengtsson, 2009).

The aim of the article is to improve our understanding of the implications of school meals

as a site for learning about nutritional and health issues in small rural schools of a developing country such as Ecuador. The assumption is that school meal programs could inhibit or help to develop and support a critical approach to health addressing its wider social determinants. Attention is given to the possible relevance of physical elements such as dining conditions and the meal's content.

The main research question guiding the study is: What are the potentials and barriers of the school meal in small rural schools in Ecuador to constitute a site for learning about food, nutrition and the wider determinants of health? The subsidiary questions are:

- 1) How are the state-delivered food supplies used or provided in each school?
- 2) How could the material conditions be associated with the social interactions at mealtime?
- 3) How could the resulting social situations be understood from a perspective of learning?
- 4) What are the perspectives of parents and teachers on the learning potential of the school meal?

2. Method

This article is based on a year-long qualitative fieldwork in three small rural schools in farming communities of Ecuador, as part of a wider research across home and school focusing on health and nutritional education. Small rural schools are typically located in hard-to-reach, sparsely populated areas. They are multigrade, having less than one teacher per grade. In this study, the schools are located in small farming hamlets composed of 50-86 households. The schools have one to three teachers and a maximum of 31 students (Table 1); one of the teachers also acts as head of the school.

The teachers and parents gave their informed consent to participate; they and the schools remain anonymous to preserve their privacy. Pseudonyms are based on one of each school's most distinctive geographical characteristics: Hillside School, Meadow School and River School.

Kindergarten, or first grade in Ecuador, is not available in these hamlets; thus, children of five years of age are placed with older children. In Hillside School, there is only a one-teacher classroom for first thru seventh grades; three children are five years old. There is a small kitchen and dining room where some children sit to eat and from where all children collect their food at mealtime. Both Meadow School and River School group two grades with one teacher, from second to seventh grade. In Meadow School, only one child is five years old; in River School, five children are five years old. In Meadow School all children eat together in the dining area, sitting on chairs at two shared tables. In River School children collect their food from the small kitchen area.

Table 1

School composition and dining conditions

	Hillside School	Meadow School	River School
Number of teachers and staff	1 female teacher	3 female teachers and 1 staff	2 male teachers, 1 female teacher
Number of children between 5 and 12 years of age	17	24	31
Dining conditions	Small kitchen with stove and sink; there is a dining table with 6 to 8 seating places.	Kitchen area with sink and stove; next to it is a dining area where children sit at a table to eat.	Small kitchen area with room only to prepare the <i>colada</i> . No dining area or table; children eat wandering about the school premises.

The study focuses on the physical and social environment within and with which children

interact during the school meal, thus, data compilation for this paper centered on the elements and actions involved in preparing and providing the food. In addition, how the meal was organized depended on the decisions of teachers or parents; accordingly, the study incorporates the perspectives of teachers and parents in order to elucidate their role as mediators.

The findings discussed in this paper are drawn from 27 participant observations of the school meal in which informal conversations with research participants also took place, and semi-structured interviews with teachers (n 10) and parents (n 39) as data sources (Table 2). The study followed an observation and interview guide that involved additional themes and aspects that have been discussed in Torres (2017).

Both teachers and parents were requested to share their views on school feeding in general, regarding how it should or could be organized, including the food supplies that they thought were needed. They were also inquired about their views on the current school feeding program, including how it was dealt with in their institution and what did they think about the state-delivered food supplies. Teachers and parents were further queried about their views on the value of health education, whether it was important for their students or children, respectively. Finally, they were asked whether they thought health and nutrition education should take place at school and if it should or could be connected with the school meal.

Each head of the school was interviewed in two different instances, at the beginning of the study and also as the study progressed in order to improve the analysis of the data generated within the study. Most interviews with parents were conducted in their home; a limited number of interviews were conducted outside the home or at school. To the extent that it was possible, the interviews were conducted as a dialogue but following the interview guide. Parents were interviewed together when they were both present during a home visit; this entailed that a number of interviews developed as conversations between the mother and the father. The lower number of observations River School was due to the fact that this school cancelled classes without prior notice on different occasions.

Table 2

Data collection: number of participant observations and semi-structured interviews

	Hillside School	Meadow School	River School	Total
School observations	11	10	6	27
Interviews with parents	15	14	20	39
Interviews with teachers	2	4	4	10

Although interviewing children may be viewed as a necessary method to understand conditions at each particular school, prodding children regarding what and how they eat, particularly in a context of poverty and inequality, could place them in a vulnerable position. Noddings (2003) has called for schools to respect and protect children's privacy, considering the "real potential for personal harm when we encourage students to speak of their own experience" (p. 104). To be consistent with the overall theoretical framework, this study did not include interviews with children in the methods used. Observations on children's actions, including what they express verbally, were employed as a means to construct the interactions of the children with the material resources and the social situation of the meal within which the children interacted with material elements and teachers and parents.

The observations thus focused on the material and social aspects of procuring, preparing and consuming the school meal, with attention to exchanges that could plausibly convey meanings about food, food practices and nutrition during the school meal, and therefore having a potential for learning about what it involves to care about and build caring relationship.

2.1. Analytical strategies

The study adopts an interpretive approach (Schwandt, 1994) to data generation within the overall design of a multiple case study (Stake, 2006) of the meal in each school. A case is

an “integrated system” (Stake, 2006, p. 2); its study is aimed at explaining an activity within its particular circumstances or “bounded context” (Miles & Huberman, 1994, p. 25). The context can be described or understood in terms of historical, political, cultural, social, ethical, and aesthetic factors; comparing contexts in a multi-case study enables to better probe and thus understand each individual case (Stake, 2006). The objective of a case study “is to produce a coherent and illuminating description of and perspective on a situation that is based on and consistent with detailed study of that situation” (Schofield, 1990).

The article approaches the school meal as a site of social learning about food and nutrition. The data is analyzed case-by-case both inductively and also with reference to the analytical and conceptual framework. Following Yin's (2011) stages of data analysis, data was first disassembled, i.e., selected and categorized according to the research questions, through an inductive process of thematic open coding. The discussion involved reassembling (Yin, 2011) the data, i.e., synthesizing comparable or contrasting issues across cases in relation to the theoretical framework. Drawing from the theory, the data was examined iteratively to find plausible relations between material elements and actions involved in the implementation of the school meal.

3. Theoretical framework

In Vygotsky's sociocultural theory, children's interactions with the material environment are mediated by peers and adults, as well as artifacts and symbolic tools such as language (Daniels, 2007; Kozulin, 2002; Vygotsky, 1986, 1994). The resulting social situation is where learning originates. In addition, the practices and expectations of children are historically constructed but also depend on the characteristics of a particular environment (Chaiklin, 2003; John-Steiner & Mahn, 1996; Vygotsky, 1986) as the “prism” (Vygotsky, 1994, p. 340) of the child's motivation, desires, needs, interests and emotions refract the environment back to the child (Vygotsky, 1986). Accordingly, learning entails to achieve cognitive and affective growth as well as develop attitudes, behaviors or skills that in turn influence the social situation within which the process of learning develops.

Applying Vygotsky's theory, Hedegaard (2009, 2014) claims that the differing motives, interests and feelings that children have at home and at school create tensions when

children move across different settings. At the root of these tensions, claims Hedegaard, is that the expectations and practices change from one environment to the other; care is subordinated to teaching at school and teaching is subordinated to care at home. To solve this possible conflict, based on Vygotsky's perspective and inspired by Noddings (1992, 2013), Goldstein (1999) and Tappan (1998) propose to emphasize the caring aspects of the relationship between the teacher and the children. As Tappan contends, a caring pedagogy can create a positive learning experience while developing the capacity and propensity of children to engage in caring practices.

In this respect, Noddings (1992, 2013) makes an important distinction between caring and caregiving: one can give care or care about but not necessary engage in a caring relationship. For Noddings (1995), caring for someone entails an encounter in which connections are created and sustained through four components: modelling or showing what care involves; dialogue or a collaborative process of receptivity, involving "insight, appreciation, or empathy" (Tappan, 1998, p. 27); practice; and, drawing from Buber (1970), confirmation or the act of understanding the reality of the other, of embracing and including.

Noddings' theory has been criticized for emphasizing the importance of care, and its modelling and promotion at school, in contrast with teachers encouraging students to be critical (Smith, 1994). Noddings (2013) herself criticizes the emphasis of school on critical thinking, and in contrast argues in favor of opening up and meeting the other. However, we argue that Nodding's emphasis on the importance of dialogue and collaborative learning is consistent with a critical health education approach (Clift & Jensen, 2005; Simovska, 2007; Simovska & McNamara, 2015; Sykes, Wills, Rowlands, & Popple, 2013; Tang et al., 2009) promoting plural thinking and democratic participation. The aim of such a critical health education approach is to develop the capacity and will to address the wider determinants of health, from which ensues the expectation that students eventually strive to change given conditions. Accordingly, food-related literacy is not constrained to competences concerned more strictly with food and nutrition; one of its dimensions concerns the interest in and ability to care for oneself and others (Benn, 2014).

Researchers have described school meals as a site for learning, that is, for knowledge building or developing competences related to food, nutrition and the wider determinants of health (Nelson & Breda, 2013; Weaver-Hightower, 2011). This entails that both formal, planned education, and informal learning, sometimes in combination with the meal itself,

may take place throughout this activity. During the school meal, children and adults interrelate socially, as well as with the material setting and resources involved in preparing and consuming the food (Douglas, 1972; Morrison, 1996; Morrison & Benn, 2000). Students value, or their experience is influenced by, spatial factors and social interactions with their teachers (Moore et al., 2011; Pike & Colquhoun, 2009). However, because the school meal is not a traditional school subject, teachers may struggle with understanding or enacting their role as pedagogical mediators at mealtime (Albuquerque, Pontes, & Oso'rio, 2013). Their personal perspectives, as well as the resources and institutional norms, influence how adults -teachers or staff- approach the school meal (Leynse, 2008; Persson Osowski, Göranzon, & Fjellström, 2013). A focus on nutrition, for example, can give way to school food and school meals become a means to regulate, control and even punish students along with parents (Leahy & Wright, 2016; Pike & Leahy, 2012; Rich, 2012).

At the same time, the perspectives of students, teachers and parents on the school meal may be influenced by their concept of a “proper meal” (Benn & Carlsson, 2014; Johansson & Ossiansson, 2012; Murcott, 1982). A “proper meal” is associated with accepted practices regarding the material and social characteristics of what is involved in preparing food and eating it, and is aligned with the particular values and expectations of people involved.

Following a Vygotskian approach, it could be said that, whether it is planned or not, children's learning about food and nutrition during the school meal is mediated by adults and peers present at mealtime, as well as by the contents and organization of the meal. And, that to be engaged in a caring relationship, i.e., to model, dialogue, practice and confirm, demands that social relations are encouraged and supported. As argued by Noddings (2013), engaging in care and thus learning about care necessarily derives from a socially meaningful approach to the caring experience and to learning. Caring in relation to food and nutrition does not only entail knowledge and resourcefulness, but also solidarity and collaboration (Benn, 2009). It could be thus argued that the teachers or staff preparing or participating in the meal must emphasize the elements of care which transcend strictly pedagogical issues or rules applied through policy enforcement. This would demand greater attention to and acceptance of the needs of children, that is, being receptive to them and embracing them in such a way that, through this practice, they can perceive how care happens and what it involves.

4. Findings and discussion

To provide the context necessary to analyze the interactions with and within it, the article first describes the practical aspects of the planning, preparation and serving of the meal. Subsequently, the discussion concentrates on the social interactions that were observed at mealtime as they construct a situation which may or may not lead to modelling care. Finally, the analysis centers on the perspectives of teachers and parents on the learning potential of the meal, as an influence on how the food is prepared and provided.

4.1. From the food supplies to the plate

The implementation of the School Feeding Program is different in each of the participating schools due to different degrees of community participation in defining how the meal meets the particular needs and priorities of each group of students. According to an observation in Hillside School at the beginning of the school year, parents and the teacher agreed through open discussion that, as in the past, the students' mothers would take turns to prepare the meal. In most of the 11 observations in Hillside School, the mothers used the powder mix to prepare dishes that were more elaborate to cook and had more ingredients than a colada, resulting in a salty main dish. Meanwhile, in Meadow School and River School the colada was commonly prepared as a drink, with added milk and raw sugar.

Instead, in Meadow School, the teacher informally requested the children to communicate to their parents when more milk or unrefined sugar was needed for the school caretaker to prepare the colada. The provision of these additional ingredients was voluntary, and when these were not provided the meal was cancelled, which occurred in 3 out of 10 school observations. In River School, parents paid a small fee per household to one of the parents (a woman raising her grandchild as a son) to procure the necessary ingredients and prepare the colada; the meal was not cancelled during the six observations that took place there, but, classes were unexpectedly cancelled four times and therefore the meal did not take place those days.

The schedule of the school meal also varied between schools. Only Meadow School followed the policy guidelines literally and served the food at 7:00 a.m., in the beginning of the school day; Hillside School and M took the break later in the morning.

In observations at Meadow School, there were several records of leftover colada in the pot and the student's cups, and bags of dry mix being sent to some of the homes in the local community. The latter was confirmed in interviews with teachers and parents to be a

periodic practice. A number of children in Meadow School were observed on different occasions to put one or two energy bars in their pockets. However, this does not mean that the food was appreciated or eaten outside of the school. Parents in Meadow School shared doubts about the quality of the food, particularly with reference to the food arriving to the school close to or after the expiration date. In two households, parents of Meadow School even expressed worries about feeding recently expired goods to dogs, as illustrated in the following interview record:

“Another time, we ate the cookies and we became sick, so the cookies that just arrived, two months after the expiration date, we gave them to the dogs. Do you think it will harm the dogs?”

(Interview with parent, Meadow School, January 27, 2012)

Similarly, in all 11 observations in Hillside School, cookies and energy bars with a past expiration date were found on a shelf next to the kitchen.

In contrast to Meadow School and Hillside School, in River School all the available dry mix, cookies and energy bars were confirmed by the head teacher and the person in charge of the meal to be expended at school by the time the new allotment of food arrived. Only in River School students were consistently observed to repeat a serving of colada and to finish the contents of the pot and the cookies or energy bars apportioned to them that day. No leftovers or uneaten food were found on the school premises.

However, the fact that the food was consumed at River School does not confirm that it was fully appreciated. When parents and teachers in River School were asked about their views on the school meal, a majority of them expressed their misgivings about the children having to eat the same food every school day for years. This is illustrated in the following excerpts:

“The children are tired of the school meal ... With the cookie and the colada, sweet and more sweet, anyone would get tired”.

(Interview with head teacher, River School, August 16, 2012)

“My daughters eat the colada but it bores them sometimes”. (Interview with parent, River School, May 12, 2012)

Similarly, parents and teachers in Hillside School and School M emphasized student dissatisfaction with having to continuously consume the same, unvaried food. In School M, both parents and the teachers most commonly stressed that the children were discouraged by the repetitiveness of the food supplies, as in the following description of how the children were perceived to feel about the contents of the school meal:

“They don't like the granola bars, and they are tired of eating the same food over and over again”.

(Interview with parent, Meadow School, January 26, 2012)

This view was shared by parents and the teacher in Hillside School, where a majority highlighted their disagreement with the food supplies. These comments frequently led to the explanation of why they prepared the meal themselves, and differently, emphasizing on the need for the meal to be tasty [rico, in Spanish]. As the teacher in Hillside School explained, this practical decision stemmed from their attention to the students' appraisal of the food supplies:

“We can't give them colada every day, because they will not drink it”.

(Interview with teacher, Hillside School, September 7, 2011)

As illustrated by this excerpt, the food supplies delivered by the state for the meal raised the concern of having to give the children something that they would reject because they considered it monotonous.

Another similarity between the three schools was that in none of them the students were observed being involved in the planning of the meal, helping to procure or prepare the food for the meal, or serving or cleaning afterwards. The parents in River School paid one of the mothers for the service and the mothers in Hillside School took turns to prepare and provide the meal, while a staff person was in charge of the meal in Meadow School. When asked about this particular arrangement, teachers and parents commonly answered that they did not want the children to miss class. Indeed, the school day was very short, from 7 a.m. to 12 p.m.

The three schools concurred that the government food supplies were problematic because they were repetitive, and emphasis was also made on the need for the children to like what they eat, in Hillside School and Meadow School, including that the meal should be tasty, in Hillside School. In addition, in Meadow School, doubts were raised about the

quality of the food supplies. While in Meadow School part of the supplies were sent outside the school, in Hillside School expired food supplies were shelved. From these descriptions and actions, it could be argued that the food supplies did not seem to represent what the teachers and parents thought should or could be used to prepare a “proper meal” (Benn & Carlsson, 2014; Johansson & Ossiansson, 2012; Murcott, 1982). However, only Hillside School planned and enacted an alternative version of the School Feeding Program, adjusted to the context.

According to Noddings (2013), adults need to be in a receptive mode in order to establish a relationship that is oriented towards caring for children at school (p. 44). This involves adopting the children's viewpoint, which is illustrated in this study through situations when the parents and teachers criticize the food supplies based on what they consider to be the children's preferences, or when they plan in terms of what they believe are the children's needs, as when the children are freed from the meal's practicalities so as not to lose class time. However, caring for others also requires confirmation, i.e., taking action with regards to children's needs and demands. In this regard, it could be argued that the findings indicate that Hillside School seemed to engage in the practice of confirmation more closely than the other two schools, as it acted upon the perceived needs and demands of the children.

One of the key aims of the critical approach to health education is that students learn to challenge the given conditions, based on the premise that health promotion demands addressing the wider social determinants. This perspective thus entails that there are no pre-defined rules for being healthy and, in the case of the School Feeding Program, this could mean that the meal may be approached differently to what the state has prescribed. It could be argued that the findings indicated that Hillside School, by modifying the program, opened up the space for critical reflection and learning about food and nutrition.

From the perspectives of critical health education and of Noddings' framework of care, the process of appraising the food supplies and deciding what to do with them would demand dialogue and collaboration between those involved. It could be said that there was some degree of dialogue and collaboration in Hillside School because the parents agreed during a school meeting to share the responsibility and complied with their commitment in turns. To some extent, these conditions could be viewed as a point of departure for a critical approach to care and learning about care.

4.2. Social situations at mealtime

As argued by Moore et al. (2011) and Pike and Colquhoun (2009), the physical and

social conditions in which a meal takes place influence the social relations that develop at mealtime. It is important, therefore, to understand the implications for learning of the human and symbolic mediations at mealtime across the three schools, as well as the resulting social situations. The following discussion centers on the interactions taking place at mealtime in terms of the space in which these interactions occurred, using the different theoretical perspectives. The discussion begins with a description of River School, where space was most limited compared to the other two schools, followed by a comparison with Meadow School, where there was ample cooking and dining space. The section closes with a comparative discussion of Hillside School, which was at the center of the continuum, having a relatively small kitchen and number of seating places.

According to data records from River School, the school seemed to have limited space to accommodate a dining area; also, the kitchen had standing-room only for up to four or five people. The students were observed collecting their individual servings at the kitchen and eating while wandering about the school premises, some of them inside a small half-empty room beside the kitchen. Also according to data records, the teachers were seen leaving the school premises during the mealtime and, thus, did not interact with the students at that time of the day. However, some students were observed to talk to the mother who prepared the colada, in the moments in which she served each student their portion along with an energy bar or pack of cookies, as illustrated in the following excerpt:

Student #1: "Good morning ..."

Mother: "Morning ... Here ..." [she hands over the colada and an energy bar as more students huddle near her while she serves from the pot]

Student #2: "Thanks" [taking his serving after looking into the pot].

Mother (to researcher): "I always prepare it with some herbs, for flavor, so that they like it".

Student #3: [returning with a used cup for a second serving] Mother: [looking around first] "Just one minute, please."

(Observation notes, River School, April 12, 2012)

This excerpt from the observation notes illustrates how the interaction between the

students and the mother who was charge of the meal was constrained to the food and was somewhat superficial. Because of the lack of space, students could not have remained in the area where the food was served, making it difficult to sustain or develop a conversation, thus limiting the possibility for more meaningful social interactions taking place.

It is possible that the lack of a common dining area in River School discouraged social interactions because the teachers and students were not able to sit together to share the meal. It could be argued that the mother in River School was more able to show some degree of empathy for the students' needs, by preparing a tasty colada, than for the teachers to find incentives in the physical setting to remain in the premises to interact with the children.

However, the interaction between students and teachers or staff also depend on the personal choice of the adults to become engaged during the meal or take an interest in linking the school meal with nutrition education (da Cunha et al., 2010; da Silva et al., 2013; Persson Osowski et al., 2013). If adults are receptive and personally engage in transforming the mealtime to meet and accommodate the children's needs and desires presumably they would be able to create a positive experience, centered on the caring aspects of the meal. Arguably, if adults in River School would have seen the meal as an opportunity for socializing with the students, and for the students to engage in and learn about caring for others, it is possible that the meal would have been organized in a different way. For example, students could have taken turns to participate in the practical aspects of the meal such as preparing, serving or cleaning afterwards. However, the data shows that the focus of the mealtime seemed to remain on providing food to the students.

It is, thus, possible to argue that the meal in River School was at a far distance from Noddings' framework of care, which could have entailed that students take part in an active manner in planning and providing the meal, so that at least they would engage in the practice of care. If the school meal would have seen as a form of caring for the students and an opportunity for modeling care, the teachers may have organized the meal so that, despite the lack of a dining area, the students shared it together in some form.

In contrast with River School, data records show that Meadow School was the only school with physical space for the meal, with a large kitchen area and dining hall where the meal was cooked and children ate at a table. The observation notes show that children would spend the mealtime talking to each other, taking their time to eat. However, the head teacher, or in her absence another teacher, would stand beside the students and give them commands, particularly prompting them to finish eating, as illustrated in the following

exchange:

Head teacher: "Hurry, hurry ..."

Student 1: "I can't, it's burning."

Student 2: "It's too hot".

Head teacher: "I am counting down from ten. Ten, nine ..."

Student 3: "It really is too hot, I burned my tongue."

Head teacher: "You have to finish ... eight, seven ... Hurry."

(Observation notes, Meadow School, March 1, 2012)

As illustrated in this excerpt, according to observations in Meadow School, it seemed that the focus of the mealtime was on formally complying with the policy. This was seemingly confirmed in the interviews, where the teachers expressed they were under pressure for time, as the breakfast was not formally scheduled and in practice interfered with the subject that was planned for that moment of the day. Data records from Meadow School show that the colada was commonly prepared in haste elumps formed and then were strained. As illustrated in the following excerpt, the teachers shared in different occasions their view that it could actually be unnecessary to serve the meal:

"Children are tired of the breakfast food, and they eat breakfast at home, anyway".

(School observation, Meadow School, February 24, 2012)

It seemed that the physical resources in Meadow School could have been more conducive to social interaction than in River School, because there was enough room for all students to sit. However, social interaction was interrupted and regulated by teachers commanding the students to speed up the process and finish the meal. It could be said that a specific norm was being imposed on the students, such as the objective of finishing the meal, over the importance of sharing the moment of eating together.

Pressed for time, teachers in Meadow School seemed to lack empathy for the children, who for example would state that the colada was too hot to eat or, as the same teachers declared, were tired of the food supplies. According to Noddings, creating a space for mutual understanding requires that teachers open up and embrace the children' needs.

Even if the meal became cold enough to eat, and students were really finding excuses not to, the teachers could have changed the time of the meal, particularly if they knew that students may have already had breakfast at home. In turn, this could have allowed more time to prepare the meal, giving more time to prepare the colada better, so that it would be tastier and have an edible texture, but especially to give it time to cool down.

The contrasts found between Meadow School and River School are consistent with the view that the physical space alone is not conducive to social interactions. Even in the case of Meadow School, where there was ample room for the students to become engaged in preparing or providing the meal, or to interact with the teachers and staff person or at least with each other at the table, teachers did not support these kind of interactions. Instead, the teachers drove attention to the consumption of the food.

To finalize this section, the case of Hillside School may help to elucidate how human mediation could be conducive to an environment supporting social interactions and a resulting social situation that is favorable to learning about care within the context of the school meal. According to observation notes from Hillside School, there was room for only six to eight children at the kitchen table. The remaining the children would sit to eat on the outer edges of the kitchen building or the school corridor. Data records show that the mother always shared the meal with the children and, when the teacher was in the school, she also shared the meal with the children. The children and the teacher would talk with each other and with the mother who came to prepare the meal.

As illustrated in the following excerpt, mealtime in Hillside School seemed to focus on the experience of the meal, even when the teacher was not in:

The teacher is not in today and the mother arrived late, after the students called her enthusiastically (her house is right below the school). I sit at the dining table to eat, surrounded by six chattering children. The mother is at the sink, washing dishes after serving the colada mix with potatoes, sardines and some chopped red vegetable. The rest of the students sit on the border outside the kitchen or the school building, eating from their plates.

Mother: "Sardines are good for you and they enhance your memory [...] but the important thing is that the dish is rico [tasty, in Spanish]."

Student #1 (giggling as he walks halfway into the kitchen): Look, he's bothering me (pointing at Student #2).

Student #2 (coming from behind Student #1, giggles, pokes at him and runs out of the kitchen).

Student #1 stays for a moment and leaves. He starts running after Student #2.

Mother: "It is important that the children eat well ... I almost didn't come today, I didn't have gas [to cook]. But then I came."

Some students who have finished eating are at the playground, on a swing or coming down the sliding rope. Others run around playing and the rest talks to each other. There is little food left on the pot.

(Observation notes, Hillside School, December 21, 2011)

As this excerpt illustrates, in Hillside School there seemed to be a feeling of obligation towards the children. This mother, for example, came despite having misgivings because she was worried about the lack of gas. Furthermore, the mother responded to the children's beckoning and prepared a main course that was, as she clarified, both nutritional and tasty. Finally, the mother did not discipline the children who were interrupting by popping in and out of the kitchen, which could have otherwise been expected.

In all the observations in Hillside School, the mothers brought different ingredients to add to the colada, which was mostly finished between the mother, the teacher, an occasional visitor and the children, who according to observation notes gave signs that they liked the food (or at least that they did not dislike it).

As argued in sociocultural theory (Daniels, 2007; Vygotsky, 1986, 1994), the social situation in which learning originates is comprised by the mediated interactions of children with the environment. Using a Vygotskian approach to Noddings, it could be said that both the physical and social elements involved in the meal in Hillside School were mediating towards an experience that emphasized caring aspects. The needs of the children seemed to be embraced by their mothers, who responded with time and resources to their need for care, including a "good" as well as tasty meal. Additionally, social interaction was not subordinated to eating but seemed to be an integral part of the meal, and actually modelled by the adults who were there to share with the children and

others during mealtime. This means that a social situation in which learning can originate, for example regarding to care, can be created despite what could be considered as constraining physical resources.

4.3. The adults' perspectives on learning

As the literature shows, the perspectives of the adults involved or in charge of the school meal conditions how the meal takes place (Benn & Carlsson, 2014; Cervato-Mancuso et al., 2013; da Cunha et al., 2010; Johansson & Ossiansson, 2012; Moore et al., 2011; Persson Osowski et al., 2010; Walton et al., 2010). Therefore, it is important to understand how the teachers and parents considered the possibility of integrating food and nutrition education in the school meal. The following discussion compares and contrasts their different views on the subject, from limited to more complex, which appear to be generally shared within each school.

When presented the question of whether children could or should learn about food and nutrition at school in connection with the school meal, the parents in River School showed a vague position; their most common answers were "I guess"; "It could be"; "I couldn't say". Concurrently, when asked whether the school meal planning and provision could hold opportunities for learning about food or nutrition, the teachers shifted attention towards the food supplies and consumption, as illustrated in the following excerpts:

"What we need is help with school lunch supplies; that is what we really want. We need to provide lunch to the children".

(Conversation with head teacher, River School, September 8, 2011)

"What we are interested in is in having, more than technical, practical support in the form of food supplies ...

(Interview with head teacher, River School, August 16, 2011)

In these excerpts, the head teacher in River School succinctly conveys what according to interviews seemed to be shared by the other teachers, which was that the issue of meal content and type was the priority. In this context, the topic of the meal's learning potential did not spark further discussion.

In contrast, in the interviews at Hillside School and Meadow School, when parents and teachers described how the meal could be a means to children's learning, they expressly emphasized that the meal's learning potential was contingent upon the content and schedule of the meal. This is illustrated in the following excerpts:

“It was much better when we had lunch, then the children would learn to eat vegetables, and they really liked the food.”

(Interview with head teacher, Meadow School; October 28, 2011)

“It was much better then [...]; we would complement the government's foodstuffs with our own fresh produce or from the school garden.”

(Interview with parent, Hillside School; March 16, 2012)

These excerpts encapsulate the concern that the teacher and parents shared in the interviews and observations, which was that the meal should include fresh and varied products of local origin, and that the children liked what they ate. Their stance could be compared to that of the head teacher in River School, however, the views of the adults in Hillside School and Meadow School transcended the purely material aspects of food. As illustrated in one of the excerpts, parents could recognize the school meal had the potential for children to learn how to improve their diet. Moreover, the sensory aspects of the meal, i.e., liking that one eats, were associated by the teacher and the parents with the opportunity to learn about food and nutrition.

At the same time, although the views on the meal from a perspective of learning are similar between Hillside School and Meadow School, the teacher and parents in Hillside School seemed to be clearer about what specifically entails to learn about healthy nutrition. The following excerpt represents the descriptions in the interviews with parents and the teacher at Hillside School of what a nutrition-related learning experience should or should not be like, which was how they explained their views based on past experiences:

Woman: “There was this gringuita [from the US, in Spanish] who used to come by bike, she studied nutrition, and she would cook some foods that nobody liked”.

Man: “If people are not used to it, it will not work”.

Woman: "It is difficult to learn new things when you are not used to them".

Man: "What always happens is that people forget what they learned once the projects leave".

(Interview with two parents, Hillside School; August 31, 2011)

In this excerpt, the parents in Hillside School also associate the learning experience with liking the food that one eats. Further, they describe the problems of using a transmissive approach to education and an episodic method of teaching. The parents seem to convey that the process of learning should be based on the learners' desires or needs -what they like or are used to- and is a progressive, not an isolated, event requiring sustained social interaction.

In the interviews and conversations, the mothers and the teacher in Hillside School commonly emphasized that they planned the meal guided by the children's expressed preferences as well as their nutritional requirements. The following excerpts represent the most common answers in the interviews to the questions of why the meal was prepared as a main course with different added ingredients:

"It's good for them".

"It needs to be tasty [rico]".

"We want to take care of the children".

(Excerpts from interviews, Hillside School, October 31,

2011-December 19, 2012)

As encapsulated in these excerpts, the most frequent theme in the interviews was the desire or wish to take care of the children, as a form of assuring their well-being. As described above, the colada in Hillside School was served as a main course that would not be expected for breakfast. Similarly to School S and Meadow School, the concern with serving lunch prevailed in Hillside School, where the teacher and the parents also claimed that the children already had breakfast at home. However, as they stated, providing lunch at

home was more difficult, and thus could not be completely guaranteed. For this reason, the parents agreed at the school meeting and expressed in the interviews and conversations, providing a later, fuller meal was better for the children.

From Noddings' perspective of care, it could be argued that the mothers in Hillside School were not only receptive when recognizing the relevance of children's desires and needs, but also embraced and included these desires and needs in their actions. Although not all the components of Noddings' framework were apparently present to be able to affirm that the mothers were engaged in a caring relationship with the students, it seems that in practice the meal in Hillside School had elements of care which were not as obvious or were not present in River School or Meadow School.

Finally, it is important to note that the way in which the mothers in Hillside School tackled the needs of the children, by providing a main course closer to lunch time, resulted in a transformation of the colada. The aim of a critical health education is that students, based on an increased awareness of the influence of the wider social determinants health, develop the ambition and skills to address these determinants. This demands reaching and executing decisions collaboratively with the goal of seeking to change conditions that may remain otherwise unchallenged although they have an impact on nutrition-related health. The teacher and mothers in Hillside School seemed to have inadvertently but purposefully adhere to a critical health education approach by collaboratively planning and undertaking the preparation and provision of the meal.

4.4. Integration of the findings, conclusions and implications

The aim of this study was to contribute to an understanding of the school meal as a site for learning, particularly in small rural schools where parents and teachers may be directly involved in preparing and providing the meal using state-provided food supplies. The article examined how the meal took place in three small rural schools of Ecuador, the social situations comprised by the children's interaction with the material environment during the school meal, and the perspectives of adults on the potential of the school meal for children's learning about food and nutrition.

The school meal was analyzed from a sociocultural perspective, as a site for learning about food, nutrition and the wider determinants of health. The contrasts between the individual cases of Hillside School, Meadow School and River School were discussed in

relation to the factors that could be involved in creating a mealtime environment and experience where learning may take place.

The study reveals an interplay between the human and symbolic mediation of or through, on the one hand, physical elements such as the dining facilities and the quality and taste of the food itself and, on the other, social elements such as the social interactions between peers and with adults or the perspectives of the adults influencing the setup of the meal (Fig. 1).

As illustrated in the figure, physical and social elements both mediate and are mediated through the interactions between parents, teachers and children. This entails that the food supplies or dining conditions do not influence in a direct manner how students react to the school meal. For example, the meal could be prepared and presented in a different physical form than originally intended, with the colada having added textures or taste, or being transformed from a sweet beverage into a salty main dish. Similarly, physical factors that could have conditioned students to interrelate, more or less, could be overridden by adults either promoting or constraining social exchange.

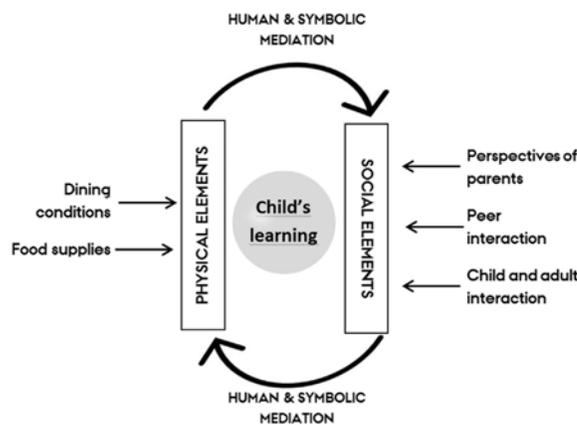


Fig. 1. The school meal as a site for learning.

It is possible that with limited time or physical space, interactions during a school meal could be more superficial, thus holding less opportunities for engaging in a caring relationship as defined by Noddings. However, if social interactions are prioritized, there

could be more room for one, two or all three main elements of care related specifically to the actions of adults: modelling, dialogue and confirmation. This also entails that even with ample physical space, adults who focus on disciplining students may limit social interactions, thus, diminish the potential of the meal for learning as a site for learning.

In exploring possible answers to the main research question, the study reflects on the notion of the school meal as a relevant and valuable site for learning through and about care for others and oneself. The study considers that emphasizing the caring aspects of the school meal would not necessarily require that pedagogical objectives relate solely to care; it is possible to learn more specifically about nutrition, food and health. A significant example of this is that the teacher and mothers in Hillside School considered that children can learn to eat specific foods through the meal. Although the adults seemingly embraced the children's preferences, they did not equal this consideration with providing only foods that the children originally favored. However, the study also shows that when the adults focus on the food, or aim at imposing norms or behaviors, as it became apparent in Meadow School, they may undermine the learning potential of the school meal. Or, that in the absence of teachers modelling and encouraging social interaction during the school meal, as in the case of River School, the opportunities of students to learn about food and nutrition may be more limited.

According to research, both teachers and students may not agree with the school meal having a pedagogical nature or goal, and involving specific dietary or social norms. However, researchers agree that there is a need for recognizing the learning potential of the school meal and conceivably taking advantage of it. In relation to this, the study finds that a pedagogical meal aimed at promoting particular rules or guidelines would first need to resolve the influence of differing conditions across schools. This does not mean that students should be left to their own devices. A flexible learning framework that emphasizes giving attention to the caring aspects of the meal could provide opportunities for adults to, in Noddings' terms, model what is required to care for others. In Hillside School, this involved acting in a critical way, reshaping what was formally pre-defined by the school feeding policy. This could possibly be the greatest potential for learning about nutrition and the wider determinants of health of the school meal in a context of poverty and inequality.

Consistent with previous research (Benn & Carlsson, 2014; Leynse, 2008; Persson Osowski et al., 2010), the study finds that the school meal is better received when it matches students' expectations or preferences. Further, the study concurs with the assumption that the perspectives of adults such as teachers, parents or dining staff, have

an influence on the contents and preparation of the meal and the provision of the food at school. Correspondingly, the study concludes that the design of a school meal program must find ways to address the views of parents and teachers.

With regard to its research implications, the study points towards new directions for understanding the learning potential of the school meal, including one of its crucial dimensions, that of care. More notably, the study highlights the value of revisiting Noddings' perspective of care in combination with a critical health education approach to food and nutrition in schools, one which values and supports the practice of opening up and meeting the other in order to address the social determinants of health through critical engagement.

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