

Holistic Eating Environments

Elements that make up eating environments and how these can influence children's experiences during school meals

Kaja Drews

Department of Design

Norwegian University of Science and Technology

ABSTRACT

Human centric and holistic design is becoming increasingly important to designers today. There are multiple factors that effect people's everyday lives and activities. With the help of previous research articles, a holistic overview of the elements which can influence mealtime experiences in primary school has been explored in this article. Culture and socialization have been identified as two key elements which influence experience. It is concluded that more research is needed in relation to children in specific, as there is currently more information about the behaviors and experiences of adults when it comes to the culture surrounding eating behavior and what can influence this. Future research could be focused on the inclusion of technology during school meals and how increasingly younger children are being given devices which may affect and hinder their ability to learn directly through observation and communication with others.

KEYWORDS: holistic design, eating environment, food, mealscapes, human centered design

1. INTRODUCTION

The aim of this article is to explore elements which make up an eating environment and how these can effect children's experiences. Physical, psychological and atmospheric elements will be explored in an attempt to gain a holistic view of the eating room and what is most important for shaping the experiences of children in a positive way. Research has shown that experiences can be influenced by physical artefacts that exist in the room as well as social relations to both peers and teachers. There are multiple elements which can influence not only eating habits but also decision making and learning during meals.

This article will explore how elements that make up an eating environment can affect the mealtime

experiences of children in an attempt to gain a holistic view which can aid the production of future eating rooms.

1.1 Children versus adults

Much research has been done on the eating habits of adults and what can influence these, however not much research has been done concerning children. Social learning is especially important for children and helps shape morals and understandings of the world [1]. A positive eating environment is vital in order to nurture healthy values and attitudes that children can carry through into their adult life [2]. Environmental psychology highlights the fact that a space is shaped just as much by the way it is perceived and used rather than only by the way it is physically

constructed [3]. So the question is what can be done or changed in an eating environment to best influence experiences and habits in a positive direction?

1.2 Human centered understanding

It is important to gain a holistic perspective of how various elements in an eating room can influence behavior and experiences in both a positive and negative direction. In this article, an overview of some of these elements and their affect are presented with the aim of giving a broad understanding of the eating room as whole. The main goal is to be able to use a human centric approach and design thinking to benefit and positively influence the creation of mealscapes for children.

2. METHODS

The methods used to collect information for this article included literature reviews where words like design, children, cafeteria, eating, environment, food, behavior were used to find relevant reading material.

3. ELEMENTS OF A MEAL

The Five Aspects Meal model (FAMM) breaks down a meal into five pieces, consisting of the eating room (room), the meetings and interactions between people in the room (meeting), the food and drinks being served (products), the set of rules that exist within the room (management control system) and the experience of the room as a whole (entirety or atmosphere) which is a result of the four previously mentioned aspects [4]. Although this model was developed for use in the restaurant and service industry to enhance customer satisfaction, it can be extended to school eating room as all the above mentioned elements exist here too. There are, however, some limitations in regard to using it for a school setting as it is not always possible to change the abovementioned aspects. Other elements which combine some of

the aspects from the FAMM are context and perception. Context has shown to be important for a meal and its experience. This context includes the food, consumer and environment which all need to be considered as a whole as they influence each other [4]. Context has also shown to be important in regard to whether behavior can be influenced by social norms. The studies discussed later in section 5 indicate that information about eating norms most effectively influence the behavior of people who are in the same context, highlighting the importance of considering multiple factors when trying to influence and improve the experience of a meal [1 & 8].

4. CULTURE

Mealtimes can be viewed as a type of cultural site which contributes to shaping people into competent members of society through the socialization that takes place. A cultural site can be defined as “historically durable yet transformable, socially organized and organizing, and tempo spatially situated arenas, which are laden with symbolic meanings and mediated by material artifacts” [5]. These sites are characterized by social participation which help produce various understandings of the world, with mealtimes acting as “both vehicles for and end points of culture” [5]. Meals help form and strengthen relationships, establish social order, and shape knowledge and moral opinions through the communication that takes place during this time [5].

4.1 Social order

This notion of social order is especially interesting in primary schools, as my own field work has indicated that when the teacher eats at the same time and in the same room as the children, the children tend to take their time eating to match the pace their teacher eats. This is perhaps not seen as important to many teachers or staff members, but could help influence and shape positive eating behaviors. If there is a clear barrier between where teachers and children eat

which limits their ability to participate in a meal together, this can influence the ability to observe and learn from a more experienced and knowledgeable person who is perhaps more capable of making healthy decision in regard to food consumption [5]. Additionally, design can help establish or diminish social order. If everyone eats together the social order may be more flat as opposed to teachers having their own table or room. The same goes for allowing children of different ages to eat with each other. This would enable a type of communication during meals where more experience people are able to interact with those with less experience. Not only would this establish cultural understanding, it can also allow for a “collaborative construction of social order” [5].

4.2 Communication

During meals, direct messages are conveyed through speech to those less experienced, where errors are corrected, directions are given and assessments are made. In schools this might often done by teachers and staff, but older children might also feel inclined to convey such sociocultural messages to younger children too. Other times, messages may be socialized indirectly through “*irony, inference, pragmatic presupposition, metaphor, and noticeable silences*” [5]. Both types of communication can occur during the same meal and help establish social order [5]. As social import is relevant for the experience during a meal, the next section will explore how design can influence socialization and why this socialization is important.

5. SOCIALIZATION

Designing for socialization can be especially important during childhood as this is when eating behaviors and food preferences are developed through social learning [6]. Health behaviors such as dietary intake are carried through into adult life, which emphasizes the importance of them being positive and healthy during childhood before they become resistant to change [7]. The

construction of the room itself can also have a huge impact as the presence of peers and the perceived eating behavior of others can influence food intake and eating behavior, although this has been mostly investigated in adults [9].

5.1 Perceived Eating Norms

Recently a study by Sharps and Robinson looked at how children aged 6-11 would respond if they were believed that other children had been consuming lots of vegetables, carrots in particular. This type of information is known as perceived eating norms or social normative information [1]. Prior research had showed that perceived eating norms had influenced eating behavior of adults but no investigation had been done regarding children’s motivation to change their behavior based on their perception of others consumption habits [9]. The children were shown fictitious information sheets about previous children as well as told by the researcher what the previous participants intake had been. The children were left with a bowl of carrots for a few minutes and told they could eat as many as they wished. The results showed the children increased their intake of carrots when they “believed that other children had eaten a large amount of carrots”, indicating that the eating behavior of others influenced their consumption [8]. This study emphasizes the importance of social context as the children were lead to believe that it was their peers’ carrot intake they were exposed to, not just a random group of other children. Perhaps methods from this study could be implemented in primary schools, through a visualization of all of the children’s fruit and vegetable intake. This way, the eating behaviors of the school children might sway each other to keep up with each others intake of fruit and vegetables or other healthy foods.

5.2 Social norm-based messages

Another recently published article by Sharps and Robinson reported on two studies that investigated the effects of descriptive social

normative based messages about other children and health based messages, and whether these messages lead to an increase in the consumption of fruit and vegetables. Social norm-based messages “highlight the healthy eating behavior of others “[1] compared to perceived eating norms which is based on beliefs about other people’s consumption habits as mentioned earlier. The children, also aged 6-11, weren’t aware that their dietary choices were being studied. During the first study there seemed to be no significant increase in intake. This could be because the children were being exposed to messages about a norm group referred to as “other children” which could cause social distance that limits the degree of conformity to a group norm [13]. This group of “other children” weren’t someone the children could identify with personally so in the second study the researchers changed the norm group to something that was easier to identify with, stating the group contained “children like you”. In the second study a visualization of the fruit and vegetable intake of other children was shown to encourage conformity to the social norm, where it always seemed the norm group of children were consuming more than the children in the study. Compared to the control condition, pooled data from both studies showed that “descriptive social norm-based messages increased fruit and vegetable intake”. [1] Context is clearly important in regard to conforming to social norms, as the children in this study seemed to find it difficult to identify with the norm groups as they were too generalized. This is perhaps why the previously mentioned study about carrot consumption showed better results, as it had a specific, relatable social context [8].

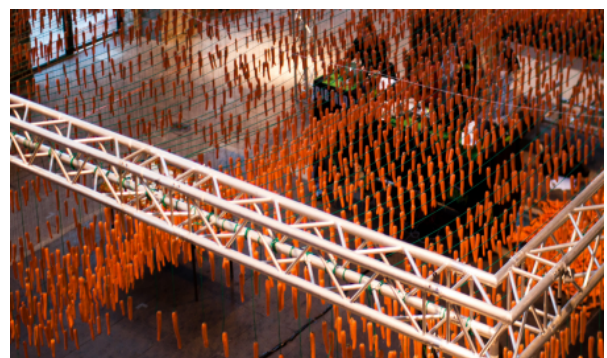
6. THE PHYSICAL ENVIRONMENT

As mentioned earlier, an important aspect of the food environment is how people interact with each other. Spaces can be used to encourage or limit interaction, and the relationship between social behavior and a physical room has been applied to the design of school buildings and classrooms previously. New open-space planning

in the 1970s required traditional teaching styles to be changed for instance [10]. This highlights the responsibility designers and architects have to not only consider changes in the physical environments but how changes to certain spaces can alter and influence the social environment. Visual elements can be used to highlight spaces to be for socialization and interaction, like a school cafeteria. Decisions made during a meal are shaped by environmental cues such as the room where consumption takes place as well as the furniture. The packaging and container the food comes in as well as the food itself also influence consumption decisions [11]. Accessibility of food, the importance of healthy foods and social norms related to consumption can all be influenced by visual cues like how the meal is served, organized and arranged [12]. Two examples will now be given to demonstrate the effect visual and physical elements can have on an eating environment and the experiences taking place in this space.

6.1 The Carrot Pavilion

The “Carrot Pavilion” is a demonstration of how design and physical architecture can have an influence on children’s eating habits and preferences. The study had an interdisciplinary approach combining multiple disciplines which lead to the creation of the carrot pavilion. 5000 carrots were hung to form walls and a ceiling, thereby creating a defined space.



Picture of the Carrot Pavilion [14]

The space was used for activities “based on sensory and playfulness, as ... sensory education

has (a) positive effect on children’s food preferences” [14]. The outcome was positive, which emphasizes how the physical environment influenced the children’s eating behavior [14]. It can be assumed that is also influence the social behavior and interaction between the children, as they were provided with tactile objects (carrots) that could be used for play, jewelry making, and competitions which all involve other participants. This project also demonstrated how physical elements can be used to explore and experiment with food, and addition brings an element of fun into the equation which can improve the overall atmosphere of the room. This study is a great example of what can be done with food and physical space to encourage children to interact with not only each other but both the room and the food, providing a holistic solution which addresses multiple aspects of the eating environment.

6.2 Holistic food design in Danish kindergartens

Another project focused on “Holistic Food Design in Danish Kindergartens”, aimed to change food behavior in a kindergarten by working with staff at the school to come up with a co-designed solution. The approach was holistic and the outcome of the project was a visible and active kitchen and eating space, which is in line with the recommendations from the Healthy Eating Design guidelines which will be discussed in the next section. The kindergarten was redesigned to more actively involve the children in the preparation of food, seen by the inclusion of an outdoor garden for planting and harvesting as well as the centralized location of both the kitchen and the meal space [15].

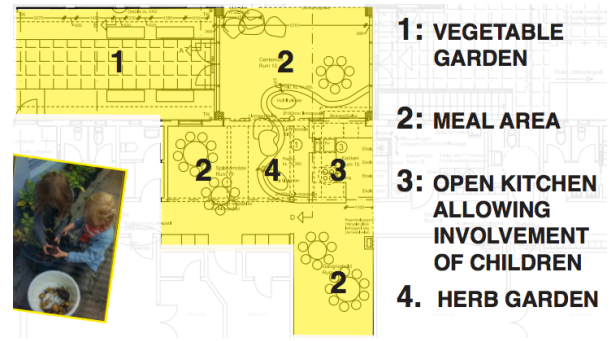


Illustration of the projects outcome [15]

These new elements not only help make the food more visible, but also encourage social interaction and contribute to a positive atmosphere where the children are able to work together and influence their own eating environment. This alteration of the physical space could also lead to new teaching methods, where the outdoor garden could be used to learn about plants instead of having to stay in a traditional classroom.

6.3 Architecture and design

The Healthy Eating Design guidelines for School Architecture has been developed using a system-perspective to give an overview of how schools can improve eating habits and the experiences in a eating room. The guidelines emphasize the importance of having a distinct space where it is possible to observe healthy eating, enforcing it as a shared value among the people who interact in the physical space. The HEDGs consists of 10 domains, objectives and design strategies which are meant to encourage better eating and food related behavior through various physical channels [17]. Both projects mentioned previously seem to correspond with some the recommended HEDG principles [18]. These guidelines could be a great source of inspiration for schools wishing to improve their physical space in order to positively influence children’s experiences within their eating room, as they are related both to the food community as well as physical environment [17].

7. ATMOSPHERE

As discussed in section 3 of this article, one of the aspects of a meal is the atmosphere. In the FAMM this is described as “the entirety of a meal” and is influenced by both our senses, which are personal and subjective, and the environment, which consists of the room [4]. Our senses can be linked to perception which can strongly influence our experience of a room without there necessarily being anything physical to see or touch that justifies the given experience. Sight, hearing, smell, taste and touch should all be satisfied for an eating experience to be considered good. These are all subjective experiences that people have individually, however there are universal norms for what is considered a bad smell or taste for instance. Atmosphere is perhaps most concerned with the feel of a space and the energy it emits. Sound and hearing can be an important factor; personal field work has shown that at primary school’s noise can be disturbing to the experience of a meal. With disruptive noise there often comes a visual disturbance as well that can effect the atmosphere. Additionally, the people that fill the eating environment contribute to the atmosphere, making culture and social context an important determinant to whether an experience is positively influenced. Overall, atmosphere is made up of both physical and intangible factors and when creating an eating environment one factor should not be considered without the other [4].

8. DISCUSSION

This article has described multiple elements and factors that influence the eating environment and experience of a meal. The next steps for being able to integrate all the abovementioned factors would be to consider them all when designing or changing an eating environment. The main opinions seem to be that social and cultural factors are very important and central to the experience of a meal. Although more research is needed, it is interesting to see that children are greatly influenced by their peers in regards to eating behavior. While the social aspect is important, it is also vital that the physical aspects

of a room allow for this socialization and knowledge sharing to occur, especially as this can influence behavior in a positive direction. Personal field work allowed for new insights in regards to this article, and revealed that the interaction between teachers and students in the room a meal was consumed was very important. Children took their time eating when their teacher was visible for them to observe. The children matched their pace to that of their teacher when she chose to eat with them, while when she didn’t eat at the same time as them some children rushed to finish their meal which resulted in them being hungry later in the day. This emphasized the role more experienced people can have in regards to shaping children’s food habits into something positive. The remaining unanswered questions are how technology can be integrated into the food experience. Technology can hinder social interactions for instance and alter the atmosphere of a room by making it less social. It would be interesting to explore how technology could improve experiences in a eating room without limiting social interaction with the people present.

8. CONCLUSIONS

In conclusion, this article has explored how the elements of a meal, socialization, culture, physical environment and atmosphere can influence an eating experience. The key findings demonstrate the importance of having a holistic view when creating a new eating environment for children, as they are influenced by more than just the physical space. Hopefully this review article has managed to give a holistic overview over some of the many elements which can play a part in influencing the experience of children eating at school and how people are influenced by all their surroundings whether they be physical or immaterial. A holistic, multidisciplinary approach is instrumental for producing successful and lasting design concepts. As mention in the introduction, places are just as much made up of how people perceive them as they are made up of physical materials.

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