

Understanding Child's Emotions and Responses to The Food using Words and Emojis Fat and Thin Child

Sakinah Siregar
State University of Yogyakarta
 Yogyakarta, Indonesia
 sakinahsiregar@gmail.com

Suparno
State University of Yogyakarta
 Yogyakarta, Indonesia
 suparno_plb@uny.ac.id

Abstract—The aim of this study is to determine the extent to which children can understand their emotions by providing responses and responses the food by using words and emojis. Emoticons can be used as a medium that can help children to recognize the negative and positive emotions that exist in children. Using emojis and emotional words is one of the medias that makes it easy for children to get to know emotion forms and express them through facial expressions. This research was carried out using qualitative descriptive analysis, which is analyzing directly to children. Through the process of data reduction, data displays and verification. The results of the analysis show that thin children are more easily respond to emotions by using emoji images, while for obese children very enthusiastically respond using words and emojis.

Keywords—preschoolers, understanding emotions, words, emojis

I. INTRODUCTION

All children have the ability to express their emotions, but the mastery of emotions that each child cannot be separated from experience and how they learn to manage it, this depends on the child's relationship with the closest person, adult and the initial learning environment where the child spends time [1]. A large number of studies show that strong social and emotional foundations help encourage children to learn, improve academic performance and positive long-term outcomes [2]. Providing understanding of emotions to children is not easy. Educators must have methods and approaches that can stimulate children without losing the process of playing in activities that are fun for children. One concept that can help children to understand emotions in themselves is with use expressions on emoticons. At the age of 4-6 years is also an age where children learn to know vocabulary, so emotional recognition is associated with the disclosure of vocabulary in children by using emotional words.

The ability of children to recognize cues is considered a key ability in their social development at the age of three years [3]. Two to six years children can respond accurately to and identify their emotional expressions and those around children like peers. [4], [5], can recognize the emoticon correctly on the image scale [6],[7], and can effectively assess their preferences for food using a pictorial scale [8]. Therefore, preschoolers will be stimulated to express cognitive (the ability to understand emotions) and behavior (the ability to express words that are appropriate to emotional decisions) "literacy" or knowledge of emotions. Research on understanding emotions in children has been done a lot by testing children's emotions against a food product. This

research was carried out using approaches such as, clinical approaches to emotional assessment used for decades, this method was used to adjust newly developed items and tried how much consumers liked the product. This is done only to understand emotions that are relevant to user experience [9].

The Oral Approach, using emotional words is used to find out the consumer's experience of a product, and this approach is very often used for emotional research [10], such as understanding emotions using products for more specific cases such as coffee [11]. Also nonverbal approach was used for the Emotion Measurement Instrument (PrEmo) Product, which consists of 12 animated cartoons without sound, by providing emotional judgments without language barriers that may exist such as on a verbal approach [12]. Dalenberg *et al.* [13], using word-based PrEmo and EsSense profiles in their research and finding each emotion approach, which relates to liking, this provides stronger predictions of consumer choice than models based on liking. Emotional methods for consumer research, such as EsSense and PrEmo profiles are more developed for adult consumers than for children. Whereas in De Pelsmaeker's research the method of EsSense and PrEmo profiles is used to understand emotions in children by knowing the child's response through flavored milk.

Although previous research has conducted research on children's emotional understanding using approaches to food and types of beverages such as coffee and milk, they only see how relevant product information is favored by children to support the production of subsequent products. Whereas in this study I will do research (1) How a child can recognize the emotional forms that children have, (2) How children can respond to something by using emojis and words, especially children who have different types of weight right and (3) Understanding the forms of emotion and how to express them correctly. The approach taken in this study is the same as the previous research which is to understand children's emotions through food, but the media used for this research are emoji images and emotional words. The purpose of this research is to find out how far children can understand their emotions by providing responses and responses the food by using the right words and emoji stickers.

The rest of this paper is organized as follow: Section II describes the literature review. Section III describes the proposed method. Section IV presents the obtained results and following by discussion. Finally, Section V concludes this work.

II. LITERATURE REVIEW

Facial expressions can be an important source of information about subconscious awareness and emotion, but assessing emotions through facial responses has several challenges. One of them observes the response or expression on the face when consuming food [14]. Changes in observed facial expressions such as happy, moody and dislike. A study of children's emotional responses to sweeteners shows differences in faces when children asked to respond their emotions by using emoticons on an electronic device screen. [15]. In another facial assessment approach, researchers used electronic devices (HP) to measure facial reactions to orange juice in two conditions. The first is an automatic reaction in which unconscious samples of their facial expressions are being recorded, and the second is intentional expressions where the child instructed to make expressions face to assess the sample. The results of automatic and intentional conditions were the same and both approaches showed significant differences across the samples, but product discrimination was better when intentional expression [16].

Emotional facial expressions can also affect food choices. To understand the desire for food when the expression of photography is pleasure, neutrality, liking and dislikes [17]. In another study also used the method of Self-Assessment Manikin (SAM) which is a visual, non-verbal scale that allows researchers to know the level of pleasure in responding to an object [18]. Where every emotional state presented in the form of 5 pictures, which are presented with 9-point rating for the rating scale of each picture. This tool used to understand children's responses during food preparation with their parents and found that children who help their parents cook food experience a greater increase in valence response and dominance when compared to children who do not help prepare food [19]. Kuenzel and Martin [20] also used SAM, along with a differential emotion scale tool (DES-III) reviewing the extent to which children understand their emotions related with their consumption experiences with food.

In cross-cultural studies, researchers found animation to be more intuitive and fun than verbal approaches [21]. Although this method was developed for non-food products, researchers have used tools to understand emotionally related foods. Gutjar and colleagues [22], used PrEmo to assess drinks at breakfast and found this tool was able to distinguish emotions between products. Using emojis as a tool to support children's development provides information they have [23]. However, the selection of visual materials requires special attention to the possible impact of visual material on the intended audience. [24] In early childhood education the using emojis is very supportive as a research method to engage children to understand and make meaning in their world [25]. In this way, emojis offer a practical and profound approach to bring children's voices into research, especially in understanding children's emotions.

III. PROPOSED METHOD

A. Research Design

This studying uses qualitative descriptive design by using interview methods, audio recorders and portfolios used to gather the right details or information easily understanding social interactions and emotional states, evaluate children's

thoughts and feelings when consuming food. The children who participated in this study consisted of 20 children with age range of 4-6 years. Children who have a weight of 18-20 kg are 10 children, while children who have a weight of 14-17 kg 10 children with the condition of each child does not have an allergy to food that is just consumed. Fat and thin children placed in a different room, this is done so that the teacher can know the differences in emotions and expressions of children when responding to food.

B. Procedure

To facilitate this activity, the teacher provides a descriptive identifier, such as a happy face, so that the child can interpret the face. Because emoticons on Android copyrighted, a set of alternative emojis provided by using images from Emoji One (<http://emojione.com>, Accessed June 9, 2018), a set of emojis available free of charge under creative commons, which adhere to standards, the same Unicode as Android images [25]. While for word emoticons use words commonly used in expressing feelings of joy, happiness, disappointment. Vocabulary is chosen according to the age level of children, namely ages 4-6 years. The words provided sourced from published literature on food and consumer emotions [26]. To reduce the list into sets, that are suitable for research with children, the most commonly used words in English and for vocabulary development with children aged 4-6 years.

C. Task and Discussion of Children

The first task before the activity begins children identify their favorite foods, least favorite foods and ordinary foods. The teacher asks the children to explain what foods they like or dislike and describe each food, and encourage to express themselves through writing or drawing. For the second task, children gave various pictures about types of food. Children also instructed to show food on a menu they like, dislike, or moderate.

After the teacher explains the activities, that will be carried out by the child. The teacher then asks the child to pay attention the forms of emoticons and asks the child to understand the forms of the emoticon and invites the child to read emotional words. Through food pictures that has been displayed by the teacher, the teacher asks each child to describe the form of emotion that the child feels when looking at food pictures that children like to food that children do not like. The emoticons are drawn on HVS paper with an attractive color. This is to find out the emotional form of a child before and after consuming the food.

D. Food intervention

Food intervention aims to make food categories that most children like, like and just, by asking children. Then the teacher writes it, as a note that helps the teacher in choosing the type of food that will be presented to the child. And the results of the intervention there are types of food and drinks, pizza, pancakes and soda. These are three types of foods that children often encounter until food is foreign to children.

E. Emotion words and valence emojis

After food intervention, children asked to choose the words and faces. They will use it to describe how to make these

foods to be children like, dislike or ordinary. Children gave emoticon stickers and paste each picture of the food they choose. In this activity, children gave the freedom to redraw food until the food becomes their favorite food.

IV. RESULTS AND DISCUSSION

This section presents the results obtained and following by discussion.

A. Results

a) Explain likes and dislikes of foods and drinks

Children asked to explain each type of foods the child has consumed, both their likes and dislikes of food, the children rely on descriptions of food characteristics to explain their attitude to food and drink. Children mention taste, texture, aroma, appearance, temperature, and spiciness as factors that influence them to like things. A child likes the elements of combined pizza, which states "I like cheese and I like pepperoni, while other kids like the various components of taco. Pizza is the meaning of common favorites with positive characteristics such as, the spicy taste of papprika and the portion of pizza being sliced. So it doesn't need too much. The preferred texture described as soft, soft, soft, and Juicy.

When explaining food that is just fine, most children call texture, like, pancakes are drying and moist pasta. When discussing the least favorite foods, children talk about the "sweet" taste and the texture is very soft. The same thing is seen with soda, where children describe the aroma like cherries and strawberries.

b) Use emotional words to describe food and drinks

When discussing emotions related to food and drink, children give their own emotional words in addition to use the words from the table, children produce various terms including emotions (for example, excited, disgusted) and which do not belong to the form of words - emotional words (for example, hunger, nausea) to describe how food tastes according to them. When asked to describe how their feeling before consuming their favorite foods, children expressed feelings like good, happy, excited, grateful, happy, peaceful, and satisfied. Some children mention feeling warm after eating their favorite food, but after further investigation revealed that these feelings are related to the temperature of food, not emotions.

After consuming pizza, participants feel excited, satisfied, happy, and calm. The ability to adjust the food according to their own tastes makes children feel strong and adventurous. Soda makes children feel active, excited, and happy when the drink is first served. After trying, children who like a drink that feels adventurous and vibrant, while children who don't like drinks feel disgusted and disappointed. When the bottle opening was demonstrated, some participants felt surprised, curious, and interested. Other children feel fear or worry. And among the two categories of fat and thin children, it turns out that children who are more enthusiastic in describing the foods they like.

c) Use emojis to describe foods and drinks

Some children were very enthusiastic when they saw emoji and children's worksheets ready to use emojis to explain how food made them feel happy or angry. Using emoji

worksheets makes it easy for children to convey the emotions of their feeling. When completing the children's worksheets, use a smiling face with open mouth, a smiling face with open mouth and teum eyes, grinning face, and face enjoying delicacies to illustrate how eating their favorite foods makes them feel good. Smiling faces with the shape of the heart's eye are also commonly marked on the worksheet.

While for the least favorite type of foods centered on emotional words, the children used several emojis in their worksheets to explain how they felt, including a face that cried loudly, frowned, angry, a screaming face of fear, and a face with a triumphant look. In filling out worksheets, soda is most often associated with emotions expressed by disappointed faces, which are associated with pain, and grimaces. Children mark emojis on their worksheets more often for pizza than other foods samples. Emojis are often chosen on child worksheets to describe the emotions associated with pizza include smiling with sunglasses, which were discussed along with the sound "mmm hmm, smiling face, smiling face with smiling eyes, and a winking face. The emoji that is most often marked in child worksheets during discussions about soda is a smiling face with open mouth and tightly closed eyes. When talking about emojis which are relevant to soda, pensive faces are used by participants to express dislike of soda, while faces are relieved to be used by children who like soda.

d) Emotion words and valence emojis

The group of thin-bodied children tended to use emojis to characterize their eating experience, whereas fatter children had more variety in the use of positive, negative, and neutral words and emojis. Words placed on positive paper include happy, happy, active, interested, happy, happy, free and friendly. Positive emojis includes smiling faces with open mouth, grinning face, smiling face with open mouth and smiling eyes, smiling face with heart-shaped eyes, and smiling face with sunglasses. Both are categorized as positive and neutral. Negative words include bad, disappointed, dissatisfied, and angry.

Emojis are consistently placed on negative paper, namely sullen faces, angry faces, and disappointed faces. The sullen face described as angry. Worry placed on both negative and neutral along with a mouthless face, an expressionless face, a grimacing face, and a confused face, which children describe as confused and shocked. Calm, bored, and lightly marked as neutral by participants. The only face that consistently placed on neutral paper is a face of relief. One emoji, a grinning face, placed in a positive, negative and neutral category by a different child.

e) Emotions in taste testing

Overall, children can understand the questions asked about emotions during taste testing and think that it will be fun. In this qualitative group situation, more children prefer emojis than words. A child who likes emojis more than words to comment, it's easier to use faces. Children show that emojis allowed to express feelings. For these children, emojis also benefit because they are more attractive, where children look more fun.

Children are sure that they will be excited to complete a taste test using emojis. A child stated that he was truly happy, because I really like emojis. Conversely, children who prefer to use their words know what the researcher is asking for. One

participant explained, for me it's easier to see words, because I'm a big reader.

f) The difference between the fat and thin emotional responses of children through emojis and word to food

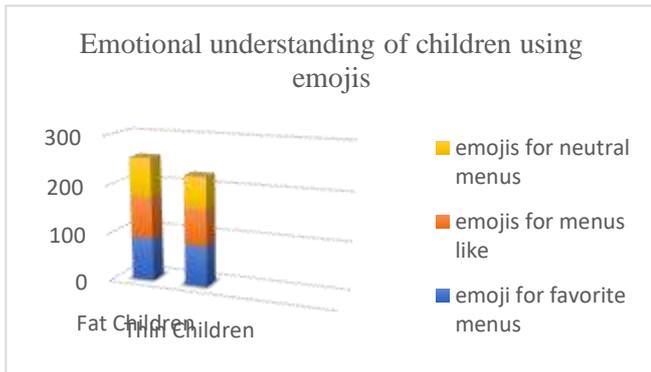


Fig. 1: Understanding the child in expressing emotions using emojis

Figure 1 above illustrates that fat and thin children both have an understanding of expressing emotions through high emojis. This shows that emoji images have a positive influence that can help children to understand the emotional forms that children have, and train children directly to express children's feelings according to emoji images, especially for food and drinks.

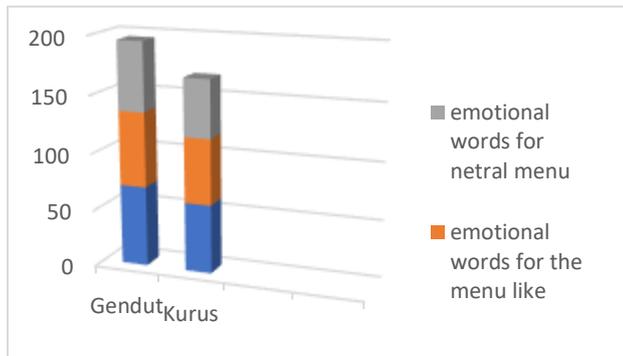


Fig.2: Understanding the child in expressing emotions using words

The Figure 2 above illustrates that the emotional expression of verbal expression is dominant in children who have a large weight. This is because fat children are more expressive both nonverbally and verbally.

B. Discussion

Through data analysis and previous research, it is clear that the use of emojis and emotional words in the context of education is very strong to support children in exploring and expressing the emotions of children. This study produces a form of children's response the foods and drinks using emotional words and emojis. This research is one of the medias that helps children recognize their emotions and understand negative and positive emotions in children. The reason is because of the open nature and using the emoji symbols, which allows opportunities for children to build meaning and share understanding with friends, educators and researchers without thinking about the right answers to identify that are asked by researchers from them. Using the

opening tools is not only supports participant involvement through the use of learning led but this activity outlines practices that support good pedagogical practices in early childhood.

Using the emoji and emotional words as a tool to involve children in developing their emotional understanding and communication of verbal and non-verbal concepts, instilling in children to better understand the forms of emotions and words which children can use in expression specifically to convey emotions both like and dislike, this is in accordance with the field study found that children are only able to respond with emotions of crying and laughing, where if the child likes the other child, he will be smile and if the child does not like the other child he will cry. Using the emoji offers that this media be used for children of various ages and will allow for ongoing engagement with other concepts, offering a flexible system for children to communicate feelings and needs for peers and teachers / educators. While this paper reports the use of emojis in a study in understanding and recognizing emotional forms in children has a very positive effect on children. Children are easier to understand emotions, children know emotion forms and are able to express well.

V. CONCLUSION

This study provides solutions in recognizing and helping children understand emotions in children. By using emojis and emotional words can help the child to express his feelings, according to what the child feels. Understanding emotions in yourself, especially early childhood is not easy. Children need good and interesting stimuli. When the child already knew the forms of emotion in him and understood it, the child will learn to understand the emotions of others, so that the interaction of children in daily life can run well. For example is feeling. The feelings of peers such as sympathy and empathy. Sympathy and empathy greatly affect children's social abilities. The author hopes that research using emojis can be developed, especially in the selection of children's interests and talents, the choice of learning themes and others. And this research is fully supported by the Affiliate Research Grant.

REFERENCES

- [1] Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact Of Enhancing Students' Social And Emotional Learning: A Meta Analysis Of School Based Universal Interventions. *Child Development*, 82(1), 405-432.
- [2] National Scientific Council On The Developing Child (2004). *Children's Emotional Development Is Built Into The Architecture Of Their Brains: Working Paper No. 2*.
- [3] Denham, S. A., Blair, K., Demulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., Et.Al. (2003). Preschool Emotional Competence: Pathway to Social Competence? *Child Development*, 74, 238-256
- [4] Mathieson, K., & Banerjee, R. (2010). Preschool Peer Play: The Beginnings of Social Competence. *Educational & Child Psychology*, 27, 9-20.
- [5] Slomkowski, C., & Dunn, J. (1996). Young Children's Understanding of Other People's Beliefs and Feelings and Their Connected Communication with Friends. *Developmental Psychology*, 32, 442-447.
- [6] Bradley, M. M., & Lang, P. J. (1994). Measuring Emotion: The Self-Assessment Manikin and The Semantic Differential. *Journal of Behavior Therapy & Experimental Psychiatry*, 25, 49-59.

- [7] Visser, N., Alant, E., & Harty, M. (2008). Which Graphic Symbols Do 4-Year-Old Children Choose to Represent Each of The Four Basic Emotions. *Augmentative and Alternative Communication*, 24, 302-312.
- [8] Capaldi, E. D., & Privitera, G. J. (2008). Decreasing Dislike for Sour and Bitter in Children and Adults. *Appetite*, 50, 139-145.
- [9] Desmet, P.M. And Schifferstein, H.N. 2008. Sources of Positive and Negative Emotions in Food Experience. *Appetite* 50, 290-301.
- [10] Bhumiratana, N., Adhikari, K. And Chambers, E. 2014. The Development of An Emotion Lexicon for The Coffee Drinking Experience. *Food Res. Int.* 61, 83-92.
- [11] Desmet, P.M., Hekkert, P. And Jacobs, J.J. 2000. When A Car Makes You Smile: Development and Application of An Instrument to Measure Product Emotions. *Adv. Consum. Res.* 27, 111-117
- [12] Leitch, K., Duncan, S., O'keefe, S., Rudd, R. And Gallagher, D. 2015. Characterizing Consumer Emotional Response to Sweeteners Using an Emotion Terminology Questionnaire and Facial Expression Analysis. *Food Res. Int.* 76, 283-292.
- [13] Dalenberg, J.R., Gutjar, S., Ter Horst, G.J., De Graaf, K., Renken, R.J. And Jager, G. 2014. Evoked Emotions Predict Food Choice. *Plos One* 9(12), 1-16,
- [14] Danner, L., Sidorkina, L., Joechl, M. And Duerrschmid, K. 2014. Make A Face! Implicit and Explicit Measurement of Facial Expressions Elicited by Orange Juices Using Face Reading Technology. *Food Quality and Preference* 32, 167-172.
- [15] Barthomeuf, L., Rousset, S. And Droit-Volet, S. 2009. Emotion and Food. Do The Emotions Expressed On Other People's Faces Affect The Desire To Eat Liked And Disliked Food products?. *Appetite* 52, 27-33.
- [16] Bradley, M.M. And Lang, P.J. 1994. Measuring Emotion: The Self-Assessment Manikin and The Semantic Differential. *J. Behav. Ther. Exp. Psychiatry* 25, 49-59.
- [17] Van Der Horst, K., Ferrage, A. And Rytz, A. 2014. Involving Children in Meal Preparation. Effects on Food Intake. *Appetite* 79, 18-24.
- [18] Kuenzel, J. And Martin, N. 2012. Measuring Consumption Related Emotions in Primary-School Children. *Appetite* 59, 630.
- [19]) Desmet, P. 2003. Measuring Emotion: Development and Application Of An Instrument To Measure Emotional Responses To Products. In *Funology* Pp. 111-123, Springer.
- [20] Gutjar, S., Dalenberg, J.R., De Graaf, C., De Wijk, R.A., Palascha, A., Renken, R.J. And Jager, G. 2015. What Reported Food-Evoked Emotions May Add: A Model to Predict Consumer Food Choice. *Food Quality and Preference* 45, 140-148
- [21] Pink, S. (2003). Interdisciplinary Agendas in Visual Research: Re-Situating Visual Anthropology. *Visual Studies*, 18(2), 179-192.
- [22] Jewitt, C., & Van Leeuwen, T. (2001). *Handbook of Visual Analysis*. Cape Town: Sage Publications
- [23] Marsh, J. (Ed.). (2005). *Popular Culture, New Media and Digital Literacy in Early Childhood*. London: Routledgefalmer.
- [24] CRUSE, J. 2015. *Emoji usage in TV conversation* 2016, <https://blog.twitter.com/2015/emojiusage-in-tv-conversation> (Accessed April 11, 2016).
- [25] Bhumiratana, N., Adhikari, K. And Chambers, E. 2014. The Development of An Emotion Lexicon for The Coffee Drinking Experience. *Food Res. Int.* 61, 83-92.
- [26] Graves, M., Sales, G. And Ruda, M. 2015. *Teaching List for The First 4,000 Words Project*. Retrieved September 2015.