

Examining Parent-Child Communication and Affect During Tabletop Gameplay in a Children's Museum: Implications for Learning

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Abstract: Parent-child communication during collaborative play in children's museums can strengthen exhibit engagement and contribute to child problem-solving and content learning. We present pilot data examining parent-child communicative acts and affect during digital tabletop gameplay. Across dyads, results show diverse communication and affect. However, consistently less nonverbal communication was observed compared to verbal communication, and almost no touch was observed. Within dyads, patterns of verbal and nonverbal acts were similar across parent and child partners.

Importance of study

Parent-child interactive play with museum exhibits increases child engagement and learning (Crowley et al., 2011). Supportive parent communication encourages children to have a positive experience, and includes using questions that produce meaningful discussion, warmth and a positive tone, immediate positive feedback, and building on previous knowledge (De Ru et al., 2015; Jant et al., 2015). Museum visitors make meaning of their museum experiences by interacting with people and materials, and focusing more on process than knowledge (Falk & Dierking, 2012). Although published literature has reported on the importance of both positive tone and specific types of communicative acts for parents and children separately, there is a dearth of remarks on the study of communication, affect, and content together during parent-child play. Therefore, this presentation of data from a pilot study describes affect and communication during parent-child interactive tabletop play and implications for parent-child learning experiences.

Method

Participants

Seven parent-child dyads participated with children between the ages of 4 years 11 months and 8 years 8 months (Mage = 6 years 4 months), who were beginning kindergarten through third grade. Of the parent-child dyads, 2 were father-daughter, 2 were father-son, 2 were mother-son, and 1 was mother-daughter.

Coding measures

Data were generated using project-developed observation codes for verbal and nonverbal communication applied to videotaped and transcribed sessions of parent-child tabletop gameplay. Observation codes were developed by modifying existing parent-child interaction codes (see Eyberg et al., 2009; Roggman et al., 2013). For each dyad, and separately for parent and child, each verbal communicative act was coded as one of six possible communication categories (e.g., command, question, response/answer, behavioral description, evaluation, neutral talk) and additionally as one of three categories of affect (e.g., positive, negative, neutral). Each category is defined for coding. For example, the category "command" is defined as "a statement in which speaker directs vocal or motor behavior of the other." Examples and non-examples are provided. Similarly, affect for verbal communication is defined. For example, "positive" verbal communication is "positive, tender, enthusiastic, warm;" "neutral" is "flat, lacking inflection and identifiable support or criticism;" and "negative" is "critical, sharp, directive without warmth or encouragement." Nonverbal communicative acts were coded as touch or nonverbal and as either positive or negative. Each communicative act could be coded as verbal and nonverbal or touch communication; however, only one category per code could be recorded per act.

Study and coding procedures

Upon IRB approval and consent, each dyad was scheduled by the museum Director for a one-hour session at the Children's Museum to allow at least 15 minutes for gameplay and 10 minutes for paperwork. When sessions were

complete, two coders transcribed videos of parent-child gameplay independently, producing a written record of all communicative acts. Every disagreement was discussed until consensus was reached. Then, using both transcripts and videos, parent-child conversations were coded by two coders independently. Inter-coder reliability was calculated between coders with attention to agreements and disagreements using Cohen's kappa ($k = .96$ verbal; $k = .95$ nonverbal).

Data analysis

Coded data were analyzed for parent-child partners in dyads to produce seven unique case studies, allowing for examination of communicative acts of individuals within dyads and across dyads.

Results

Overall, coded data for individual and collective dyads represented the full range of verbal communication categories, and within dyads, the verbal communications were fairly consistent across parents and children. For most dyads, neutral affect dominated verbal communication. Within and between dyads, verbal affect, touch, and nonverbal communication varied substantially. Overall, children were more likely to engage in verbal communicative acts with negative affect than parents, although infrequently overall. Additionally, verbal communication with negative affect was most often attributed toward gameplay rather than toward the parent. Numerous occurrences of nonverbal communication were observed across parents and children, and minimal communicative touch was observed from both parents and children. Figure 1 shows data from one dyad.

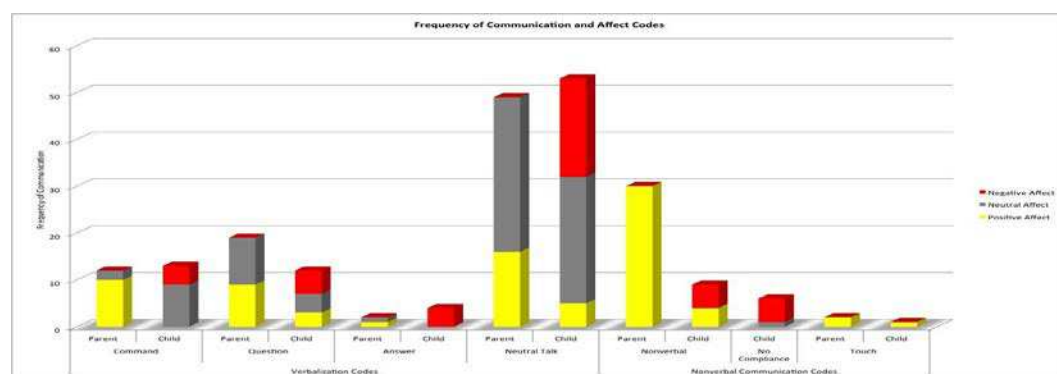


Figure 1. Occurrences of verbal and nonverbal communications and affect from one dyad.

Implications

Given that parent-child dyads naturally engaged most often in verbal interaction and within dyads, parents and children tended to produce similar types of communication, this pilot study suggests dyads may benefit from examples of approaches to gameplay to increase what appears to be naturally-present collaborative and problem-solving verbal communication. Further, given that a range of affect was observed across dyads and children were more likely to engage in negative verbal communication than parents, parent-child dyads may benefit from strategies to help children use positively-framed verbal communication during gameplay. Results indicate that the interactive gameplay platform encourages parents to use positive verbal communication, which is known to support learning in museum settings (De Ru et al., 2015; Jant et al., 2015).

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