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Child's Play

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A stone house is home to innovative child development research

By Mary Lou Peter

The joyful sound of children playing fills the air as preschoolers make up games and decide who will be the leader on a warm spring morning. The scene could be any child care center or preschool across the country, but this one is different. A closer look reveals that many of the children are wearing tiny GoPro cameras that are recording their interactions with each other and with adults.

Child’s play
The recording cameras are part of the latest child development research project at Kansas State University’s Hoeflin Stone House Early Childhood Education Center. Researchers can observe the children without interrupting their play.

Certified early childhood teachers at Stone House teach and care for children while their parents work or attend classes. The playgrounds and classrooms are a safe haven, where child development researchers observe children’s interactions with each other as well as their teachers and assistants. Stone House is a home for high-quality early education and care for children and families to be safe, but it is also a research site and a place where teachers and college students come to learn.

Stone House — an iconic limestone building on the Manhattan campus — was built in 1866 as a private home and was purchased by the university in 1925. It was named Hoeflin Stone House in 1975 to honor Ruth Hoeflin, dean of the College of Human Ecology from 1975 to 1983. Additions and renovations followed, and now the updated building has six classrooms as well as meeting and office space, plus three playgrounds and a classroom for K-State students majoring in early childhood education.

About 65 children attend Stone House at any given time and range in age from 6 weeks old to 5 years old. “We strongly believe in play-based activity, but there’s a need for research of that activity to understand its role in cognitive development,” said Deborah Norris, associate professor of early childhood education and lifespan human development.

Norris and colleague Jennifer Francois, assistant professor of early childhood education, are leading research projects to delve deeper into early childhood behavior, language development and temperament in young children. To take a closer look, Norris and Francois are leading a team that formed the Research and Inquiry Network at Stone House, also called RAIDNIPS, in 2017 to facilitate research that examines connections between children’s development and learning and their early childhood experiences.

A fly on the wall

The team is particularly interested in the interplay among characteristics of adults, children and the environment they’re in on children’s development and learning, Norris said.

Two primary lines of research within RAIDNIPS are “The Power of Play” and “Infants, Toddlers, Preschoolers: Language, Literacy and Learning Environments.”

For a recent six-month Stone House study, and with the consent of parents and the children themselves, preschoolers donned GoPro cameras that recorded 310 videos — hours and hours of children playing in, or sitting on, the playgrounds. The vast amount of recordings is proving extremely valuable.

“Children are not identified by name, instead, the research team is looking at how and if children’s social and cognitive play, plus their physical activity, changes over time. The researchers also are studying how the availability and complexity of play spaces and materials influence children’s social and cognitive play as well as their physical activity.

Once recorded, segmented and analyzed, the video results will be converted to early childhood educators. Their insights will benefit children, teachers and parents, as well as students who are training to become teachers. The research team can also record on-demand play or playgroups on camera, as the information will form the foundation for language development, imitation, emotional control and complex problem-solving. Research has demonstrated long-term benefits to establishing these skills through play in a child’s early years.

“One thing that surprised us is the richness of what we have in these observations, and that we can learn from them,” Francois said.

For a study on preschool leaders and followers, Makayla Norwood, a junior in human ecology and family studies, and Manuela Norman, a senior in family and consumer sciences, studied the power dynamics of children and their interactions with their teachers using eye tracking.

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Norris and Francois noted that undergraduate and graduate students working at Stone House come from an array of backgrounds, including psychology, kinesiology, human development and communication sciences and disorders. Some students work directly with the children in classrooms, some help analyze data, and others conduct their own research projects under the guidance of faculty advisers.

“There’s a need for supervision, but there’s much more child-directed and problem-solving when the play is happening without adult intervention,” Francois said. She added that in some cases, the children make up their own rules. “By using the GoPro cameras, you get a little bit of a sense of being a fly on the wall, which allows us to extend our research examining children’s child-directed play.”

Another novel K-State study is investigating how young children’s executive function skills — such as working memory, cognitive flexibility and self-regulation — change over time. In this study, children complete tasks on a touch-screen monitor, and their performance on these tasks over time provides an understanding of how their executive function skills change.

As part of the infant-toddler line of research, Francois has used external eye tracking to investigate how familiar caregiver influence young infant language skills. These are collected beginning when the infants are 3 months old for one-month phases. The researchers specifically want to understand how young infants come to recognize familiar caregivers. What makes a familiar caregiver familiar? How does infant attention to local characteristics of familiar caregivers change over time? And how does infant attention to the facial characteristics of familiar caregivers differ from attention to unfamiliar people?

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