Knowledge in Development Lab

Hello from the KID Lab at Michigan State University!

This is an update on research projects that have been conducted at the Knowledge in Development Lab over the past year. We are very excited to celebrate the lab’s fourth anniversary this fall. We could not have succeeded without the help of the parents, children, and educators in our community. We have enjoyed working within the community very much and your involvement has provided us with a better understanding of how children develop.

What is the Knowledge in Development Lab?

The Knowledge in Development Lab is located on Michigan State University’s campus within the Department of Psychology. Graduate and undergraduate students conduct research studies in order to gain a better understanding of how children process information, how they seek out and evaluate knowledge throughout their development, and how their thought processes develop. The lab primarily works with children between the ages of 2 and 12. A visit to our lab entails one session, scheduled by the parent, where children complete a game or activity with our friendly researchers. Our research rooms are located just outside our waiting room where parents can observe the interaction through our video monitoring system. At the end of each session, children receive a prize as well as a free pass to the Impression 5 Science Center. When a study is complete, we analyze the differences in thinking between children of different ages and we publish the results so that they are available to other scientists, parents, and educators.

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Meet Dr. Danovitch

Dr. Judith Danovitch is a professor in the department of Psychology. She received her BA in Psychology and Biology from Harvard University and her PhD in Psychology from Yale University. When she is not conducting research or teaching Developmental Psychology courses at MSU, she enjoys reading and traveling with her family.

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How Children Think about Learning and Expertise
Participants: Children ages 4-6

Does knowing one thing help you learn new things? Or does it make your brain too “full” to hold new information? This project examines how children view the relationship between your knowledge about a topic and your ability to learn about related or unrelated topics. Children were presented with two puppets: one was an expert on a particular topic, while the other was not an expert on that topic. Then children were shown the expert and non-expert reading books about a brand new topic. After watching the puppets “studying” the new topic, children were asked which puppet learned more about the new topic. Our data show that children do not necessarily make the connection between knowing about one topic and being able to learn about a related topic. Instead they sometimes believe that knowing less leaves more “room” in your brain to learn more about something new. We are currently exploring how these beliefs change and develop over the preschool and elementary school years.

The Ad Game
Participants: Children ages 3 - 5

Companies spend millions of dollars each year marketing products to children. Advertisements aimed at children often include images of familiar characters to persuade children to buy certain products. This project looked at how much children trust what familiar cartoon characters say. Children were presented with four popular cartoon characters (Dora the Explorer, Bob the Builder, Nemo, and Blue) and had to choose their favorite one. After choosing a character, children were introduced to a new cartoon named Pat who looked very similar to their favorite character. The two characters then gave contradictory answers to questions about novel information (e.g., where do blickets live?) and the children were asked who they believed was correct. Next, the children heard one character give three incorrect answers to questions about familiar information (e.g., what color is grass?) while the other character gave three correct answers. The characters then made more contradictory statements about novel information and the children were again asked which answer they believed.

At the end of the study, children were shown ten sets of objects. One object was damaged but had a picture of their favorite character on it and another object was brand new. Children were asked which object they would rather have. Our results show that children continue to trust a familiar character even if the object gives wrong answers. They are also more likely to want an object with a familiar character on it even if the object is damaged. These results suggest that seeing familiar characters in ads or on packages has a major influence on children’s decisions.
Who Knows Best: Boys or Girls?
Participants: Children ages 4-5

Do children show equal trust in men and women? To answer this question, children in this study watched a video of a man and a woman answering three questions that the children knew the answers to (e.g., “What do rabbits eat?”). One of the adults always gave the right answer (e.g., “Carrots”) and the other was always wrong (e.g., “Shoes”). In the video, some children saw neutral questions, while others saw gendered questions (e.g., “What is used to play basketball?”, “Which part of the body is lipstick put on?”). Then children were asked which of the two people would know the answer to questions about new information (e.g., “What time does the library open on Saturday?”).

We found that children pay more attention to a person’s accuracy than gender when seeking advice. They prefer to ask the previously accurate person to answer the questions about new information. For example, when a man has been answering neutral or gendered questions correctly, children trust him to know about new information even if it is female-typical (e.g., “Which store has the best skirts?”). This is particularly interesting because young children usually answer such questions based on gender stereotypes. These results show that children are willing to set stereotypes aside when they are given more information about people’s knowledge.

Sad, Angry, Afraid, Oh My!!
Participants: Children ages 4 & 5

Do you make better decisions when you are angry or calm? Happy or sad? In this study, we looked at whether preschoolers understand how emotions affect people’s behavior. We were also interested in whether children’s understanding of emotions in others relates to their understanding that different people have different thoughts, feelings, and behaviors (known as “theory of mind”). Children heard stories about an angry character and a sad character. They then heard about an outcome and were asked to decide which character matched the outcome (“Who do you think put the puzzle together correctly? Greg, who was feeling sad, or Andy, who was feeling angry?”). Children also completed three tasks to measure their understanding of other minds. Our results show that children who have a better understanding of other people’s minds also show a better understanding of the relationships between emotions and behaviors. These results will help parents and educators learn more about children’s social and emotional reasoning, as well as potentially improve therapeutic practices.
People vs. Computers: Who Knows More?
Participants: Children ages 5-10

Adults generally understand that human beings and computers are capable of different things. While a computer may be better at finding obscure facts, only a person can decide if a story is happy or sad. However, it is unclear if and when children are able to make this distinction. To study this issue, we told children about a make-believe game show in which imaginary contestants were asked a question in order to win a prize. The contestants could get help answering their question by going into one of two ‘rooms’: one filled with very smart people and the other filled with computers. In the first part of the study, children had to help the contestant out by suggesting which room they should go into. The questions involved either factual problems that a computer should have an advantage answering (e.g., “How many feet are there between Earth and Mars?”) or questions that only a human should be able to answer (e.g., “Is this new comic book scary?”). Our results suggest that even the youngest children understood what kinds of questions computers and people would be better at answering.

In a follow-up study, we found that children’s choices were driven by their understanding of people’s strengths and weaknesses, and that their understanding of what computers can do is not well developed until late elementary school.

Where Our Research has Taken Us

The KID Lab is proud to have bright and talented student research assistants involved in all aspects of our research projects. On April 13, 2012, they had the opportunity to present findings from their studies at Michigan State University’s University Undergraduate Research and Arts Forum (UURAF). Caroline Bell and Amanda Hardwick (top photo) presented their research on children’s ability to understand reflective and impulsive actions in others. Zack Keith and Ryan Duffy (middle photo) presented research on what children learn from 3D exhibits at museums. Meghan Kanya (bottom photo) presented her thesis project on children’s understanding of emotions in others. She even won a first place prize for her oral presentation!

In addition, Meghan and graduate student Christine Shenouda presented their research at the Cognitive Development Society conference in Philadelphia, PA in October 2011.
KID Scientists in Action!

Here are some photos of recent visitors to the KID lab participating in our studies.

A Special Thank You...

We would like to thank the following schools and organizations for allowing us to visit and conduct our research this year:

- Apple Tree Christian Learning Center in East Lansing
- Educational Child Care Center
- MSU Child Development Labs in East Lansing and Haslett
- Okemos School Preschool and KEEP Programs at:
  - Bennett Woods Elementary School
  - Central Elementary School
  - Cornell Elementary School
  - Edgewood Early Childhood Center
  - Hiawatha Elementary School
- Scribbles & Giggles Child Care Learning Center
- St. Martha School
- St. Thomas Aquinas School

We also extend a big thank you to the parents and children who visited our lab on the MSU campus and to the Meridian Township Farmer’s Market for hosting our recruitment events. Our research would not be possible without your support!
Coming Soon…

Research at the KID Lab never ends! We still have much to learn about children’s cognition and how it changes over development. When we finish gathering evidence for our initial research questions, we often need to conduct follow-up studies in order to gain a more complete picture of certain aspects of child development. Some topics we will be addressing in our upcoming research include:

- How emotional experiences influence children’s generosity towards others
- How children develop concepts of ownership
- How exposure to computers and emerging literacy influence children’s preferences for information sources

Recent Publications from the KID Lab

KID lab researchers have published a number of scientific articles this year. The following are some of our recent titles and the journals in which they appeared.

- Little pitchers use their big ears: Preschoolers solve problems by listening to others ask questions. Child Development.
- Children’s and adult’s intuitions about who is entitled to own things. Journal of Cognition and Culture.

Full copies of recent publications are available on the KID lab website.

Get Involved!

We are always looking for families, daycare centers, and schools that are interested in participating in our research. You can contact us by calling 517-432-8166, sending an email to msukidlab@gmail.com, or signing up on our website at http://psychology.msu.edu/kid/. If you are a parent, we will contact you as soon as we have a study available for your child’s age group.

In addition, we are now on Facebook! “Like” our page (MSU KID Lab) to view updates about child development research and our lab.

Finally, if you have moved, changed your phone number or contact information, or simply have questions or concerns, please let us know!