SINQ
Scientific INQuiry Learning using Social Media

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What is SINQ?

SINQ is a prototype mobile social media (SM) application that utilizes social participation to guide learners through an everyday **S**cientific **INQ**uiry process. Our project begins to address the need for design-based studies that can better understand the design of social media for children's learning.

Design Challenge

One design challenge is figuring out how to leverage new technologies to help individuals use their everyday knowledge to engage with scientific inquiry.

Science inquiry practices take the form of constructing explanations, assessing available sources of information to inform one's observations, testing hypotheses, and interpreting data or results (NRC, 2000).
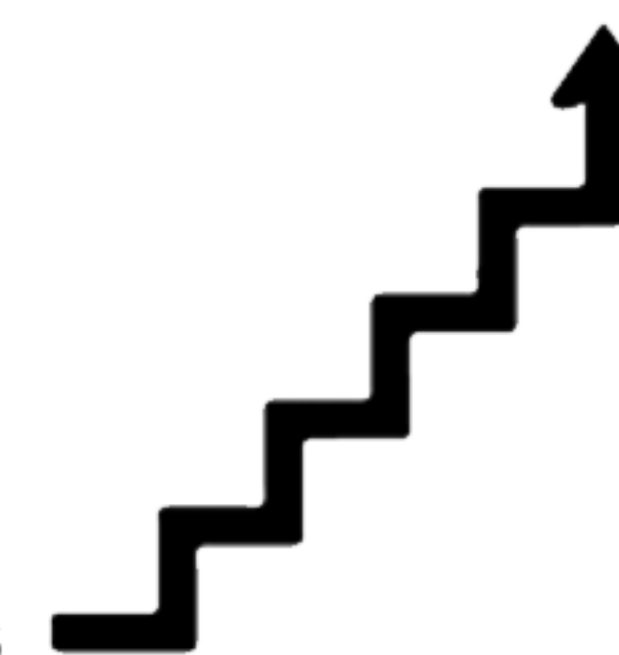

Design

Collaborative Engagement
Public projects in SINQ allow for more collaborative engagement to be built in science learning. Learners' contributions of questions, hypotheses, and investigations are posted and are socially vetted.

Incremental Contributions
We designed SINQ so that learners can enter into the science inquiry process at any point through contributions of questions, hypotheses, or investigation ideas to match the fluid nature of scientific inquiry. The system guides learners through the entire process regardless of where they start.

Social Vetting
SM tools, such as Facebook™ have various voting mechanisms. However, beyond simple voting we believe that the reflection process is crucial for effective learning (Cahill et al., 2011) and is an important aspect in scaffolding in learning tools (e.g., Quintana et al., 2004). Therefore, SINQ is designed with prompts to promote reflections and elicit participation.
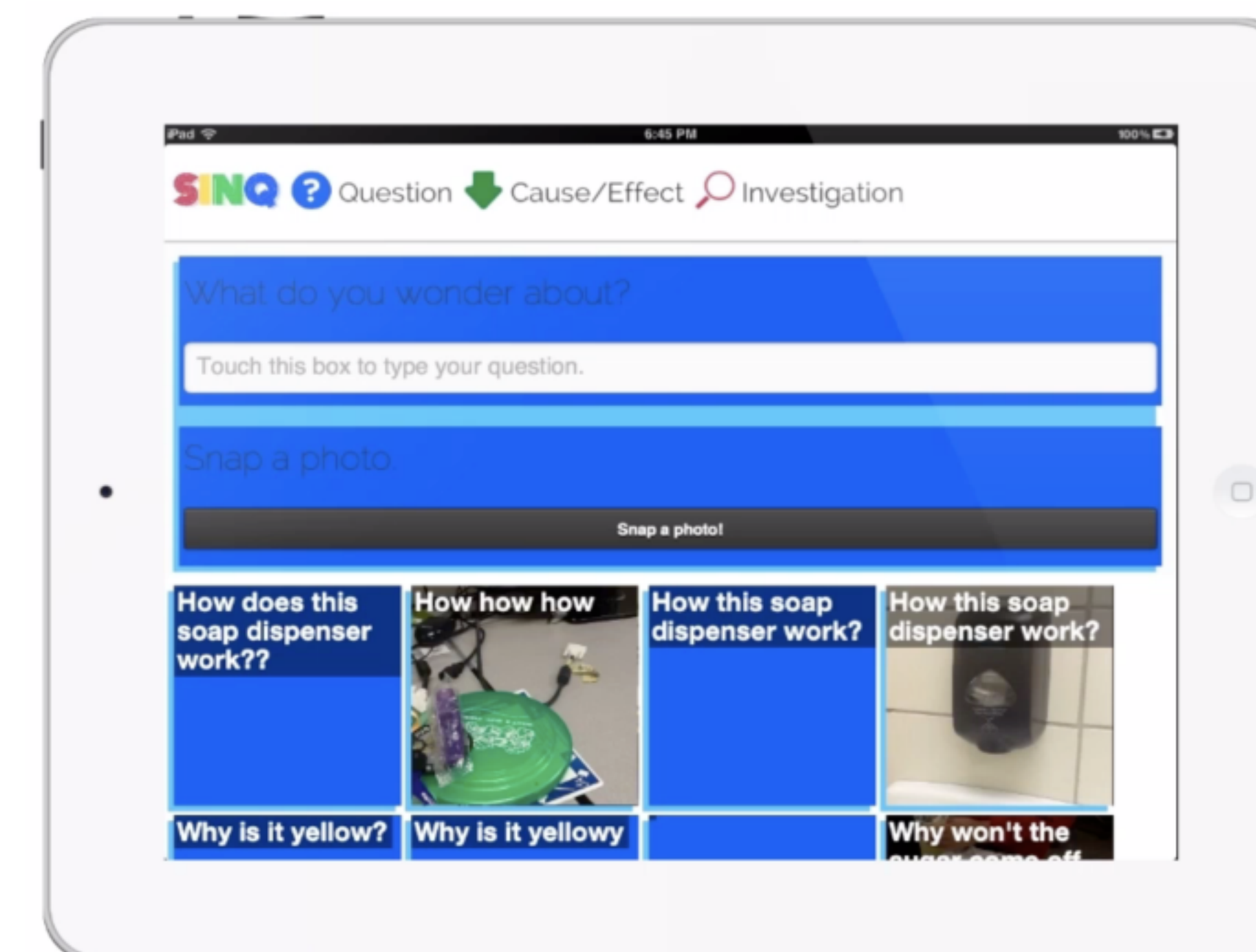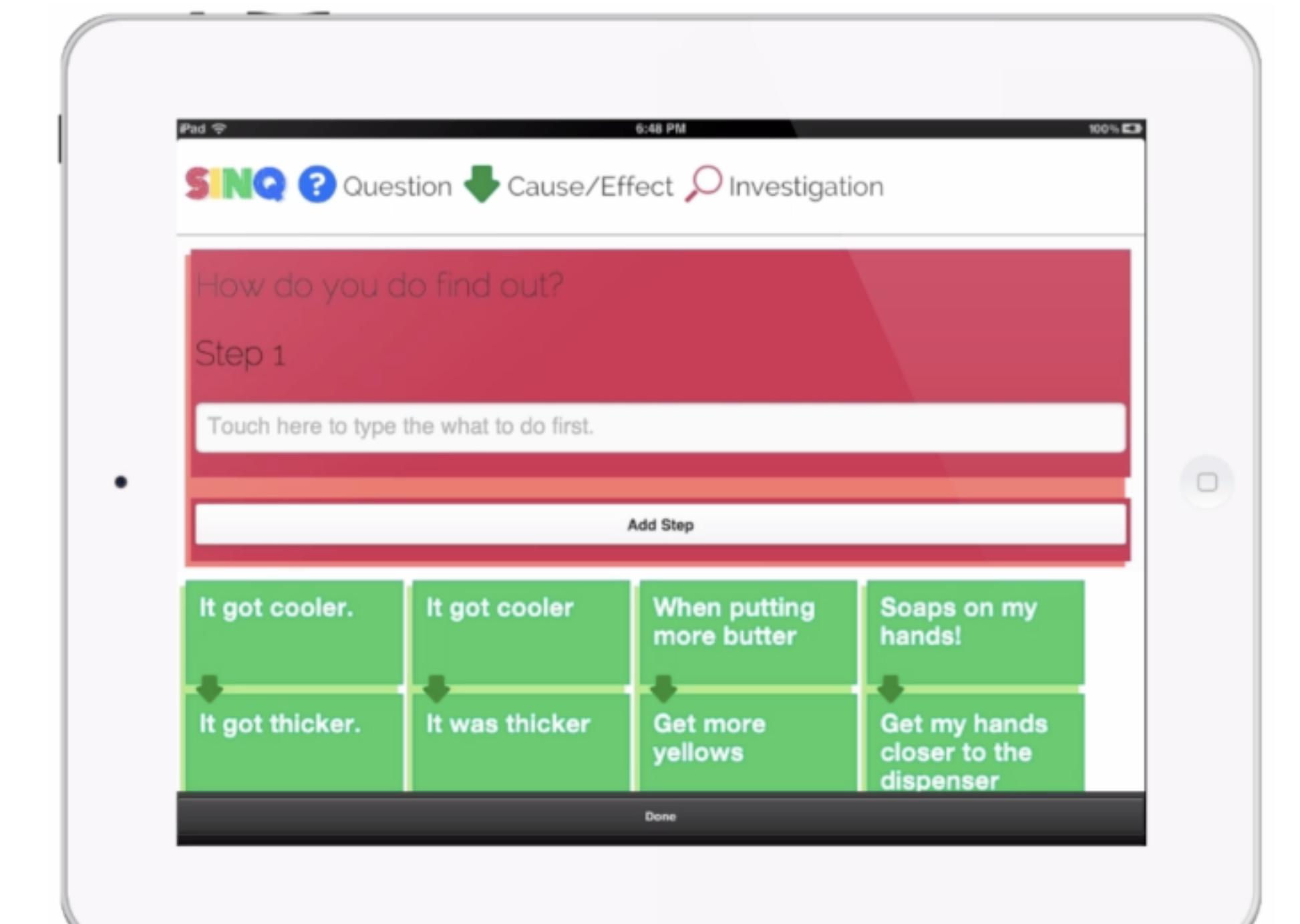
Natural Inquiry
Children need technologies that fit naturally into their daily lives and make science learning personally meaningful (Clegg et al., 2012). SINQ allows learners to enter an inquiry at the moment of inspiration. SINQ allows learners to capture photos of their interest, ask questions or develop a hypothesis based on what is recorded, and post the response to their networks.

Interface
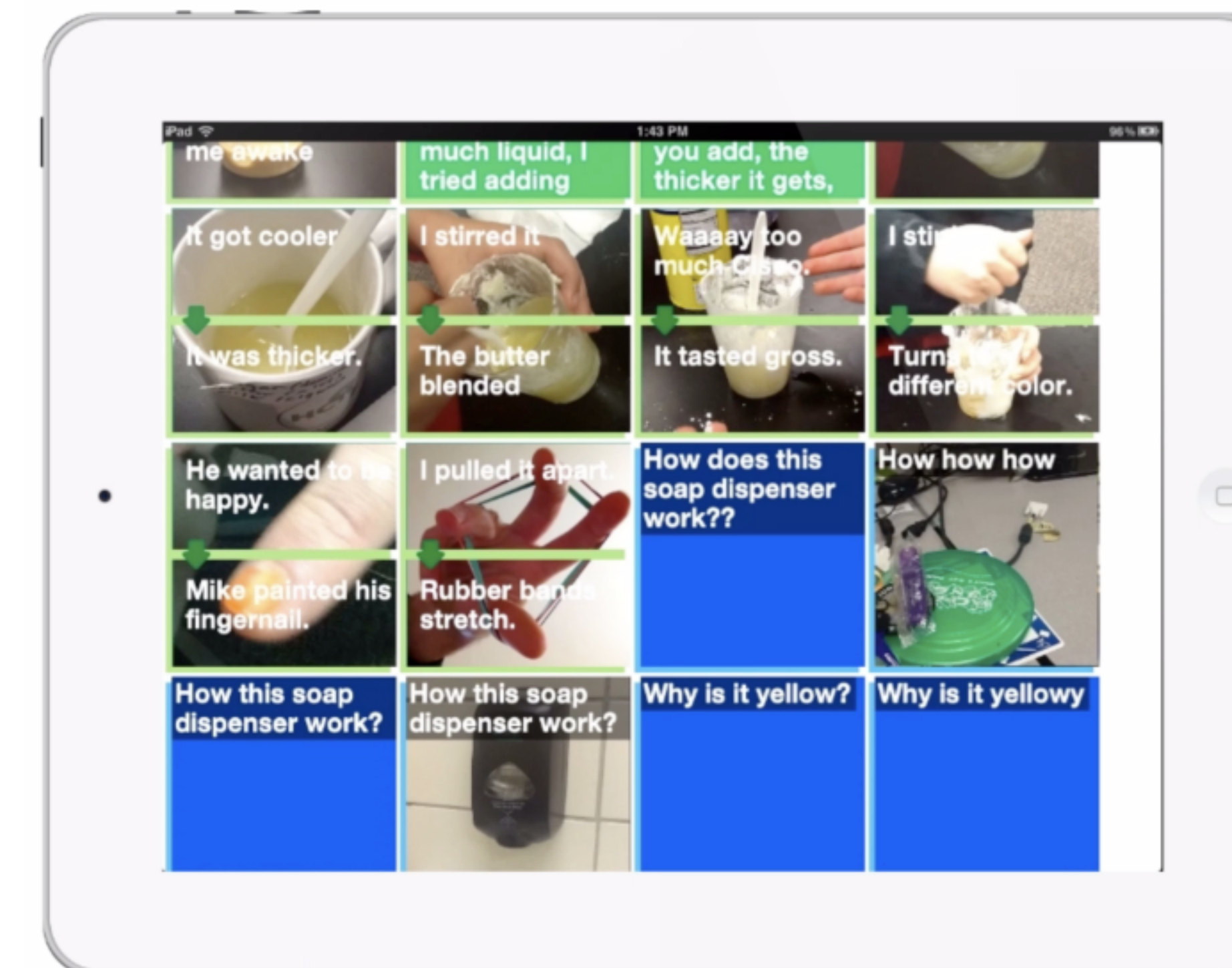
Main Page: Questions, hypotheses, and investigation ideas are all displayed with integrated media.

Cause and Effect: Learners input what they notice and what do they think is happening.

Questions: Users input their questions and can use photos.

Investigations: If an idea comes up, learners can write step by step processes for investigations.

Recommendations for Social Media Learning Design

Design
- Use interdisciplinary design
- Codesign with children
- Developing with learning environment
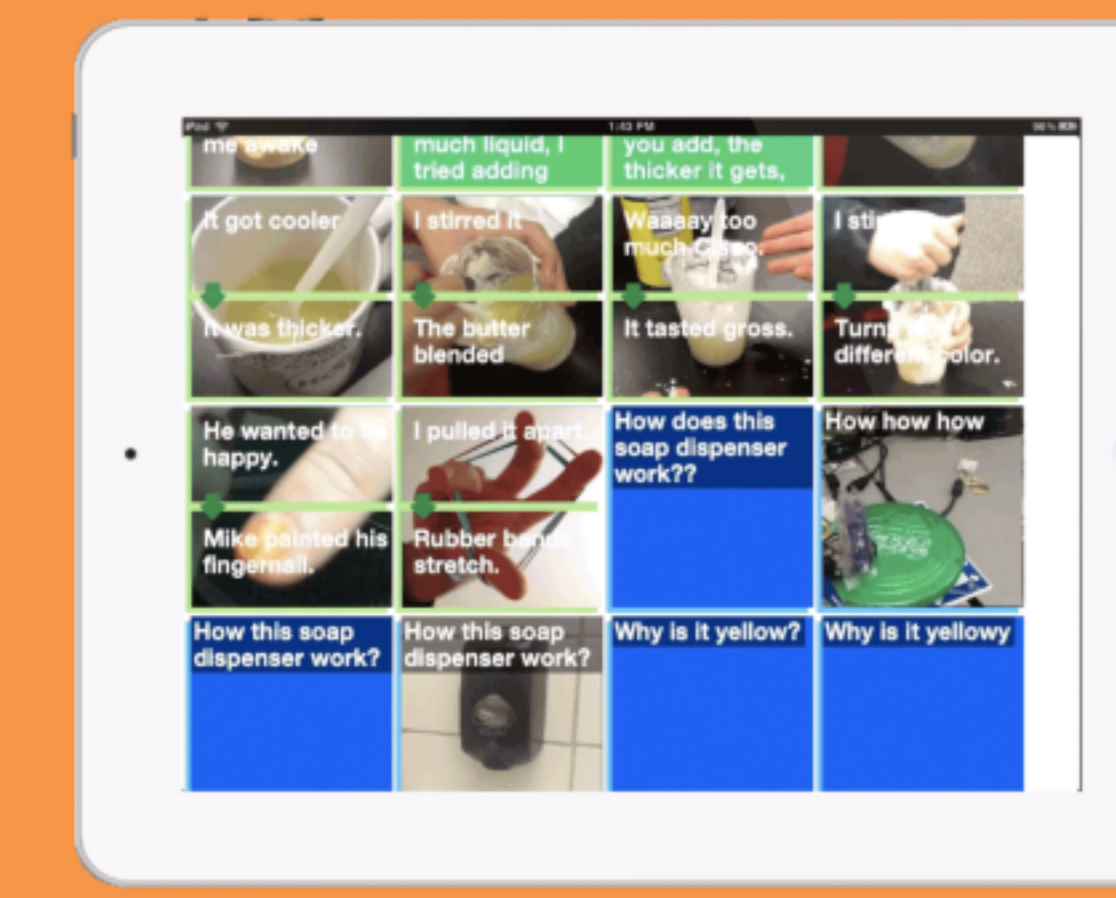
Social media as a learning tool
- Strive for natural and mobile interaction design.
- Distribute complex inquiry processes.
- Provide natural scaffolding through SM feedback mechanisms.

References
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Clegg, T. L., Bonsignore, E., Yip, J. C., Gelderblom, H., Kuhn, A., Valenstein, T., & Druin, A. (2012). Technology for promoting scientific practice and personal meaning in life-relevant learning. In *Proceedings of the 11th International Conference on Interaction Design and Children* (IDC '12) (pp. 152–161). New York, NY: ACM.
Quintana, C., Reiser, B. J., Davis, E. A., Krajcik, J., Fretz, E., Duncan, R. G., … Soloway, E.   (2004). A scaffolding design framework for software to support science inquiry. *Journal of the Learning Sciences*, 13(3), 337–386.

Icons designed by Jens Windolf from the Noun Project