

# The Butterfly Effect: Knowledge Building in Kindergarten: Instilling Practices to set up Life Long Knowledge Building Learning

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**Abstract:** This exploratory Pilot study examines 22 Junior Kindergarten Students scientific discourse from Hub of Innovation site, over eight weeks of a Knowledge Building intervention, while examining a unit on Butterfly Life cycles. The authors chose to examine this issue as it is a strong demonstration of how Knowledge Building is with young students without the usage of Knowledge Forum technology. Findings in the final poster will demonstrate analytics figures regarding discourse & text analysis from students and teacher discourse, and we will compare the two. Findings also found the incorporation of three guiding Knowledge building principles as understood by students to further their thinking.

Many educational specialists newly introduced to Knowledge Building believe that Knowledge Forum execution is in tandem to (the online software which utilizes Knowledge Building Pedagogy). This assumption would lead out very young students who are grasping reading and writing skills and building foundational, and that very young students actually cannot do Knowledge Building as they cannot use Knowledge Forum. By incorporating Knowledge Building in Junior Kindergarten, learning is transformed into a frontier to identify and transform a student's schema. Students can have theories as young as the age of four in trying to decipher and understand their world from a social, scientific, historical, and environmental perspective. The research question is: how can young students incorporate Knowledge Building as easily adaptable principles as a part of their learning trajectories to build a base block in order to continue knowledge building in higher years?

The purpose of this poster is to demonstrate Junior Kindergarten's scientific inquiry on the life cycle of butterflies, and how Knowledge Building Principles are incorporated into a Junior Kindergarten class, and this poster will demonstrate some analytics of results of the discourse from student's learning and the Knowledge Building principles they incorporated. Knowledge building started in the earlier years have student comfortable with sharing their ideas, and exploring discourse and concepts while children can be coinvestigators (Author 1985)

Knowledge Building sessions usually took place in half groups (11 students in each group) weekly. To best understand the students' authentic questions and theories, students are interviewed for what they notice about different life stages of butterflies, what they think, and what student wonderings. Their responses inform further Knowledge Building sessions, as well as make up the examined discourse. Authoritative sources such as books, videos, and pictures are usually used to inspire students' initial ideas, discussions, and to help them re-think their theories. Hands-on activities follow after Knowledge Building Circles, in which the students can apply what they have learned to draw or model different life stages of the butterfly. We have learned that the classroom implemented the following three, easily adaptable knowledge building principles, as they were readily understandable by 4-5 years old. These three principals were explained, adapted and implemented in ways in which the students could understand, and elaborated upon on the final poster.

- Improvable ideas
- Constructive Use of Authoritative Sources

- Knowledge Building Discourse

Next steps will have research continuing until the end of May, as this piloting work is essential to establish weaknesses in the study design and will provide more information on the final version of this poster. By continuing research collection, it will provide valuable discussions on how newly introduced Knowledge Building teachers, teachings without technology and teachers with young students can begin to incorporate Knowledge Building principles in their classroom. Our final poster will include the following diagrams and analytical diagrams and analysis of the comparison of teacher and student discourse. Findings will be demonstrated through some of the following including but not limited to analytic word clouds, vocabulary density, & word frequencies.