

# The Effects of Early Science Education on the Acquisition of Executive Functioning Skills in Preschoolers

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## The Ohio Early Learning Assessment of Cognitive and EF Development

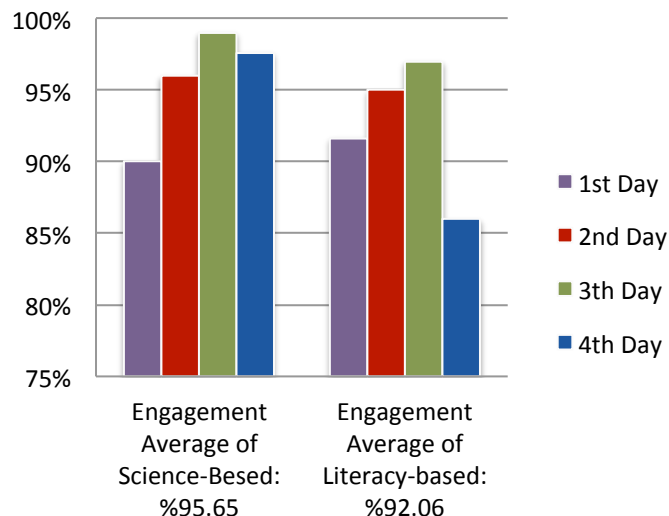
### Research Objective

- To provide a better understanding of the impact of early science education on executive function skill development in preschoolers
- To Identify differences in the level of child engagement in literacy-based versus science-based early childhood programs.

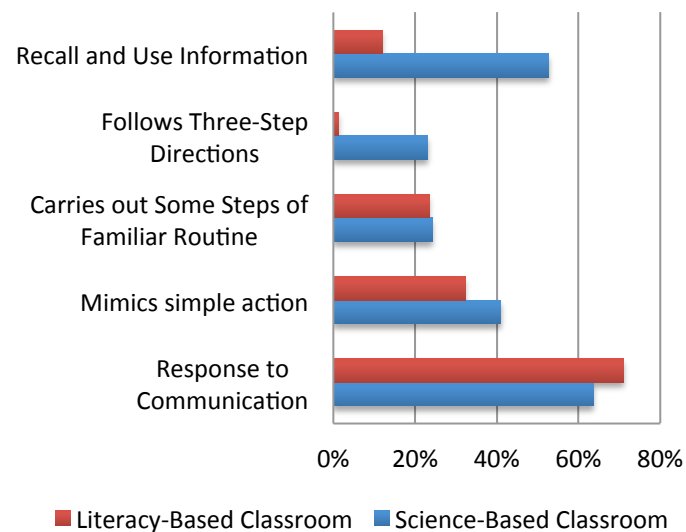
### Methodology

- Structured observation comparing a science-based early childhood program and a traditional literacy based program.
- The Engagement Check II (McWilliams, 1994) was used to assess the number of children engaged in general activities of daily routine (Fig.1).
- An observation of the number of children engaged in specific tasks related to executive functioning was observed (Fig.2).

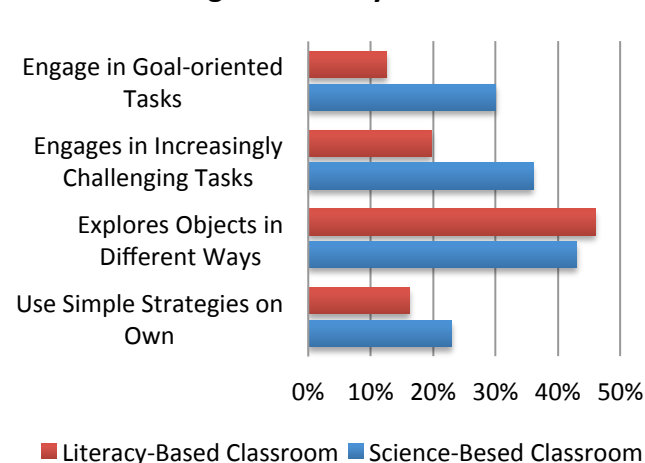
**Fig.1 Engagement Check II (McWilliams, 1994)**



**Fig.2 Working Memory**



**Fig.3 Inhibitory control**



## Executive Function Think Tank



## Results

The science-based curriculum appeared to

- Support higher degrees of working memory for recall and use information and also following three-step directions (Fig.2).
- Support greater inhibitory control and allowed children to engage in increasingly challenging tasks, and engage in goal-oriented tasks.(Fig.3).