

Infants and toddlers' learning of a problem-solving strategy from a Baby Einstein DVD

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Abstract— Media is increasingly being directed at and consumed by young children, with little understanding of what impact early viewing might have. However, there is no clear evidence that children under two can effectively use television or DVDs as a source of information. This study examined whether children could utilize a problem-solving strategy that they viewed on a Baby Einstein DVD in a real-world context. Groups of infants (12- to 15-month) and young toddlers (18-24 months) were randomly assigned to a viewing condition or a control group. The DVD was viewed in children's homes fifteen times over six weeks. Every two weeks, all participants were brought into the laboratory and observed while trying to solve a simple task that was modeled in the DVD – using a long spoon to obtain a piece of food from a high shelf. Results indicated a significant time by condition by age interaction such that older children in the DVD group were more successful at transferring the strategy at the end of six weeks. Theoretical explanations of infants' difficulties imitating a problem-solving strategy from the DVD suggest that a lack of representational insight, coupled with information processing difficulties, as the likely source of infants' problems.

Index Terms—Imitation, Infancy, Media, Television

I. INTRODUCTION

The production and sale of infant and toddler videos and DVDs are increasingly lucrative for companies seeking to expand their product lines to a relatively new niche [1]. Sales are increasing, despite a report by the American Academy of Pediatrics [2] recommending that parents curb television viewing for children under 2 years of age. However, there is a dearth of research on if children under two have the developmental capacities to learn effectively from television. Tests of imitation from screen media in infancy have not used commercially-produced products that are viewed in the home [3]. Such cognitive abilities would require an understanding of the symbolic nature of television as well as the information processing capacities to comprehend the perceptual features of screen media. In this experiment, children were observed over six weeks to see if they could imitate a problem-solving strategy from a *Baby Einstein* DVD.

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II. PROCEDURE

Participants between 12-24 months were divided into two groups. The experimental group viewed *Baby Wordsworth*, a DVD produced by the Baby Einstein Company, LLC. Parents of children in the experimental group were instructed to view the DVD as they normally would at home. Children in the experimental group returned to the lab for follow-up visits every two weeks for three visits. Adult participants were instructed to have their children watch the DVD five times between visits. Thirty-eight children (48.1%) were in the experimental group, and 41 children (51.9%) were in the control group. The control group did not view the DVD, but also returned to the lab after two weeks. There were no significant differences in the demographic characteristics of the two groups.

All children took part in a problem-solving task where they tried to obtain an object that was out of reach. To complete the task, they needed to use a long spoon as a reaching aid, a strategy demonstrated in the DVD.

III. RESULTS AND DISCUSSION

IV. Analysis indicated two significant interactions, an age x time interaction ($F[3,108] = 4.16, p < .01$) and an age x time x condition interaction ($F[3,108] = 2.72, p < .05$). These results indicated that children older than 18 months who had seen the modeled action on the DVD were able to successfully demonstrate the problem solving strategy. It may be that perceptual features of television may hinder young children's abilities to use it as a source of information [4]. Additionally, children may need to achieve representational insight to adequately learn from television [5].

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