

PBS KIDS IPOD APP STUDY: EXECUTIVE SUMMARY

Ninety iPod Touch devices were given to groups of 3-7 year old children from two Title I Schools – one in Washington D.C. and the other in Bloomington, IN. The children were asked to play two Apps: *Super Why* and *Martha Speaks: Dog Party*, featuring characters and content from the popular television shows, for a two week period during the spring of 2010. Parents were asked to submit daily observation forms and complete short pre- and post-study surveys. Children were given pre- and post-study tests to assess ability in reading skills and content areas covered in the Apps.

Usability: We found children to be relatively skilled at using the two Apps. There were few observed or reported problems with either App, and the few usability problems that we observed during the first session seemed to diminish over time as the children became more acclimated to using the iPod and playing with each App.

Despite their general comfort using the iPods, however, there were some take-away lessons for parents. We discovered, early on in the study, that there were no controls on the Apple iPod OS to prevent actual deletion of Apps and it was subsequently quite easy for children to accidentally remove Apps. Younger children also had some difficulty navigating the iPod menu screens to find and select the App that they wanted to play, but seemed to develop more proficiency with navigational skills over time – though some of the youngest children in the study still required parental or adult assistance to find and launch a desired App successfully, as well as to facilitate meaningful educational play (rather than merely entertaining play).

Generally speaking, children played the Apps more at the beginning of the two-week study (more frequently and for longer periods of time), but began losing interest in playing after reaching a point where they were no longer getting new content, i.e., at the point where their play experiences became stale or redundant. Many parents expressed interest in upgrading or purchasing additional levels or vocabulary/activity expansion sets if they were made available.

Children, especially more skilled readers, evolved interesting patterns of play over the course of the study, including ways to keep the Apps fun and challenging after they had already seen and/or mastered much of the content. Some of the unique or unanticipated play-patterns that we observed or learned of included: seeking a high score or personal best score on “Pop-Quiz” in *Martha Speaks: Dog Party*, collecting as many different pictures as possible in “Doggie Dress-Up,” playing “Pop Quiz,” “Martha Says” and other mini-games with the sound turned off (so as to force reading or memorization of the written words), and deliberately picking the wrong answers in “Super Why’s Story Saver” to see silly pictures and hear funny sentences. We also noticed some advanced navigational techniques to acquire desired stickers in Super Why (e.g., stopping and re-starting mini-games until arriving at a new activity with a new sticker, presumably).

Appeal: Both Apps held a general level of appeal for children. Younger children (i.e., 3 and some 4 year olds) gravitated toward *Martha Speaks: Dog Party* because its mini-games were intuitive and easily playable for non-readers through random-play and guessed-answer play styles. Emerging readers, (i.e., youth ages 4 and 5) found *Super Why* appealing and a good match for their ability level in most cases. Less skilled readers, however, sometimes had problems with mini-games within *Super Why* that they perceived to require more reading (e.g., response options that consisted of words rather than picture or picture-word combinations). Older children (i.e., 6 and 7 year olds) were more challenged by the advanced vocabulary presented in *Martha Speaks: Dog Party*, and therefore found it to be a better fit for their ability level than *Super Why*.

Learning Outcomes: We saw learning gains on the content and skills from both Apps. We found the highest gains on assessments of visual and verbal vocabulary presented in *Martha Speaks: Dog Party*, with average gains of 20% on both the short and comprehensive vocabulary assessments (i.e., a gain of .8 or 20% on the short, 4-item verbal vocabulary assessment, and an average gain of 20% more items correct on the comprehensive vocabulary post-test as compared to the comprehensive vocabulary pre-test. Gains for many of the reading skills covered in *Super Why* were more modest, but still present with gains on the short assessment (2% sentence completion, 3% for rhyming words to and 6% for letter-sounds). However, a comprehensive assessment of rhyming words, modified to eliminate participants who had either mastered or did not seem ready to learn the concept, produced average gains of 25% (unfortunately there were not enough participants in this category to be statistically significant).

It is important to keep in mind that the limited length of exposure to the Apps and differences in the skills that children of different ages were ready to learn (i.e., developmentally able or “primed” to learn) made it more challenging to find consistent learning gains across all participants. For example, most 6 and 7 year olds had already mastered letter identification and letter sounds so we were not able to see gains in those areas within those age groups, however, they were more primed for learning some of the more advanced vocabulary presented in *Martha Speaks: Dog Party*, and we were therefore able see more gains within those age groups on vocabulary assessments. This pattern explains instances where we see spikes in learning/gains among 4 and 5 year olds, as compared to younger and older children—the former not being ready to acquire the skill and the later, having already mastered those skills, presumably.)

In addition to learning gains observed through our assessments with the children, parents also reported that the Apps were educational—with many citing specific example of words their children had learned (and subsequently used in daily conversation), and/or concepts their children had learned or practiced while playing each App.