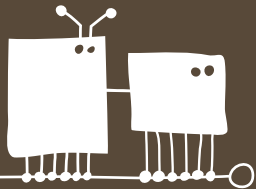


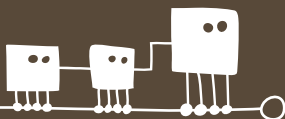
Getting a read on the app stores

A market scan and analysis
of children's literacy apps



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executive summary

In previous research the Joan Ganz Cooney Center and New America have characterized the children's educational app market as a "Digital Wild West" (Guernsey, Levine, Chiong & Severns, 2012; Shuler, 2011). The marketplace is chock full of choices but lacks essential information to aid parents' and educators' decision-making. In 2014, the Joan Ganz Cooney Center, with partners at New America, launched a new study of the most popular educational apps marketplace by focusing an in-depth inquiry on literacy-focused apps for children ages 0-8 years. We analyzed a sample of 183 apps from among lists of the "Top 50" educational apps in popular app stores and those that had recently won critical acclaim from expert review sites. Next, we examined the apps along numerous dimensions, including characteristics of their descriptions (e.g., number of words used to describe each app; target audience age-range; specific skills mentioned) and features within their actual content (e.g., the nature of adult-directed information; types of activities). Below are the study's key findings.

Key findings regarding app descriptions

Language- and literacy-focused apps for young children comprise a substantial share of popular and promoted apps marketed as "educational"

34% of all "Top 50" apps that were paid and 29% of all "Top 50" apps that were free were added to our sample as language- and literacy-focused apps for young children. When looking at expert review sites (Common Sense Media; Parents' Choice Awards; and Children's Technology Review), we found that 21% of Expert-awarded apps fit these criteria.

Parents are likely to encounter different apps depending on where they look

In our sample, only 17% of apps were simultaneously listed among the "Top 50 educational" apps in an app store and among the Expert-awarded apps (from 2013-2014). There may be some further cross-over with time, as top apps from app stores win awards later or awarded apps become promoted in top 50 lists. However, these findings indicate that two parents who search for children's apps at the same time via different sites will encounter largely different apps. What is more, the Expert-awarded apps tend to cost \$1-\$2 more than top 50 paid apps, possibly perpetuating an "app gap" whereby more affluent families will end up with higher quality apps.

Children’s language- and literacy-focused apps range considerably in the amount of information provided to parents in app store descriptions

The number of words in our sample apps’ descriptions varied considerably, from 13 to 1,089 words, suggesting that parents and educators could learn a lot about one app and very little about another before deciding whether or not to purchase them. The average length of these descriptions varied such that those listed among the Top 50 Paid educational apps tended to have longer descriptions (Average = 369 words), compared to Top 50 Free educational apps (Average = 293 words). The description length of Expert-awarded apps fell in the middle (Average = 342 words).

Apps for the preschool-age audience are especially plentiful

Despite the substantial difference in the language and literacy skills appropriate for children across the 0 to 8 year age-span, we found that approximately 40% of app descriptions give little or no indication of the specific age or developmental stage appropriate for the respective apps. When target age ranges were listed, most apps (90%) listed preschool-age children as at least part of the target audience. An examination of the specific language and literacy skills mentioned in app descriptions also indicated a predominant focus on the preschool and kindergarten audience: the most commonly encountered skills included proficiencies like alphabet knowledge, phonemic awareness, and understanding upper vs. lowercase letters.

Most apps do not mention various “benchmarks” of educational quality, including education or child development expertise on the development team, underlying curricula, or research testing

Less than half of the apps in our sample provide information about their development teams. The percent of apps that mentioned a child development, education, or literacy expert involved in app development ranged from 36% of Top 50 Paid apps to 20% and 18% of Top 50 Free and Expert-awarded apps, respectively. Fewer than a third of all apps mentioned an underlying educational curriculum (29%). Any kind of app testing was even more rare: 24% of app descriptions mentioned research testing, which was overwhelmingly usability or appeal testing rather than learning efficacy.

Key findings regarding app content

Most language- and literacy-focused apps for children feature competitive or testing-based activities such as games, puzzles, and quizzes

The majority of the apps in our sample (71%) contained at least one activity that we classified as a puzzle, game, or quiz. These were activities which had right and wrong answers, rather than open-ended designs. The percentages of apps containing puzzles, games, or quizzes did not vary based on whether apps had won awards from expert review sites or were listed among the Top 50 Paid or Free apps in educational sections of app stores. However, apps that had won awards from expert review sites were more likely than other apps to contain storybooks or other narrative formats (56%, compared to 39% of Top 50 Paid and 29% of Top 50 Free).

Hotspots, which make noise or animate when touched, and narration are common in children’s language- and literacy-focused apps

Nearly all of the apps in our sample (92%) contained some form of animation. In 45% of apps we also found interactive “hotspots,” or sections of the screen that move and/or make noise when touched in ways that are not central to the game or story.

In keeping with the focus on the preschool and kindergarten age group, 34% of the apps read storybooks aloud while 89% narrated other types of activities within the app.

The majority of language- and literacy-focused apps provide some in-app information to parents, but the nature of that information varies

We found that most of the apps (79%) contained some adult-directed information within the app's content. Overwhelmingly, this adult-directed information was contained in a specific section of the app (e.g., "Parent section"; 76% of apps). The type of information provided to adults varied considerably. Many apps gave basic instructions on how to use the app (40%), while others gave adults information about privacy and security (38%). Few offered feedback to adults about children's performance (17%), gave suggestions for enriching the app's use or effectiveness (17%), or offered more detail about the educational content (14%). Notably, detailed information about the educational content, such as what the app's teaching strategies entailed or why certain skills were important, were most commonly encountered in Expert-awarded apps (27%) compared to Top 50 Paid (9%) or Top 50 Free apps (10%).

Many apps allow users to adjust some structural settings related to educational content, though very few have broad content "leveling" options

We looked at various forms of customization options within each app and found that the ability to adjust basic settings (such as turning the music off and on) was quite common (66% of apps). Many apps also enabled users to adjust structural aspects of the educational content (such as the number of response options offered in a quiz; 51%). What was considerably more rare was the ability to set the overall level of difficulty for a user (also known as "leveling"; 17%). Leveling was somewhat more frequent in Top 50 Free apps (29%), compared to Top 50 Paid (13%) or Expert-awarded apps (14%).

Few popular language- and literacy-focused apps are explicitly designed to promote joint media engagement

Given the proven benefits of intergenerational and joint peer engagement around digital media, we looked for various explicit functions within the apps that would allow children to share content or connect socially through the app, or to co-use it with others. Very few apps in this sample had any of these joint media engagement features. In fact, only two apps had explicit co-use functions built into their design, such as collaborative or competitive play with another player. Fewer than 10% allowed users to contact or share content with others, through social networks, email or text, or directly through the app.

Recommendations for industry, parent/educator, and research communities

Opportunities for industry:

Develop industry-wide standards for the education category

A set of specific criteria for guiding an app's placement into the "educational" category could guide developers' classification of their apps and help assure consumers that they have educational value. Similarly, a uniform or easily comparable way of delivering information within and across app stores could help parents and educators compare apps and make informed decisions.

Provide consumers fully transparent information about content and ranking processes

Parents and educators looking for children’s educational apps would benefit from more detailed information about the apps’ content and development and how apps end up on the “Top Educational” lists. At the time of this analysis, none of the app stores posted information about how their rankings are devised.

Design for intergenerational use (joint media engagement)

Young children learn best when another caring individual joins in the process. Educational app developers should consider explicit design features that engage multiple users. Specific suggestions include designing with the child user’s interests in mind, incorporating content or mechanics that are more challenging to maintain an older user’s interest, and enabling co-users to create content together.

Suggestions for parents and educators:

Search for information about apps through different sources

Given the inconsistency in information posted about apps and the nature of apps promoted through different sites, parents and educators need to do some extra legwork to identify quality language- and literacy-focused apps. Try looking for information about apps of interest across app stores and expert review sites, and looking at producers’ websites.

Give voice to frustrations and great finds

Parents and educators should consider giving feedback—positive and negative—to developers in order to impact change or reinforce desired app features.

Guidance for researchers:

Investigate the characteristics of language- and literacy-focused apps that are most effective for teaching young children

Researchers are now focused on the apps marketplace and its potential. They should continue to conduct empirical studies of the design, content, and use factors that optimize the educational value of children’s apps, particularly with regards to language and literacy learning.

Translate and share findings with developers as well as parents and educators

Researchers who work in this field should make a concerted effort to translate their findings into accessible and actionable recommendations, and share their guidance with parent, educator, and industry audiences.