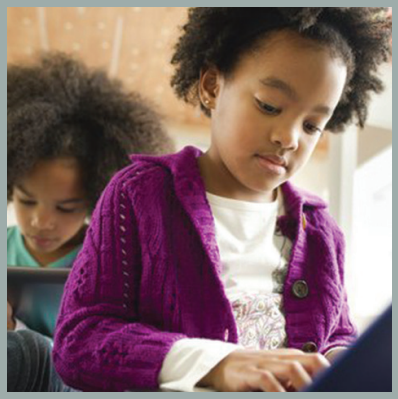
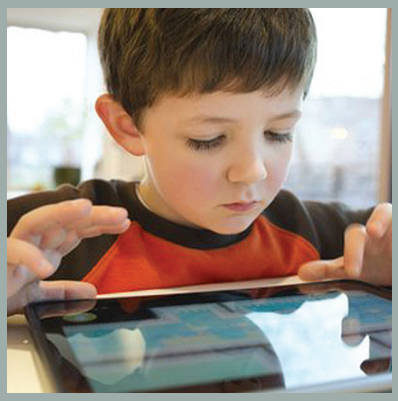
Living and Learning with Mobile Devices



What Parents Think About Mobile Devices for Early Childhood and K–12 Learning



Grunwald Associates LLC

Learning First Alliance

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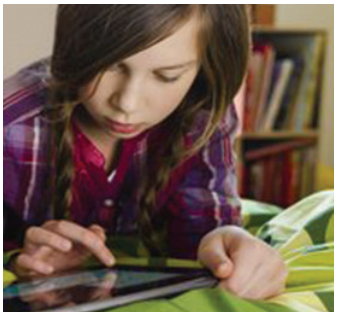

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Executive Summary

Mobile learning is a hot topic right now, with great expectations from advocates that mobile devices could transform education, engage students and personalize learning.

The reality is a more nuanced—and less homogenous—story. How parents perceive the value of mobile devices, how they see their children actually using family-owned mobiles for productive (and not so productive) purposes, and what parents think of the possibilities, is a tale of both abundant potential and missed opportunities for mobile learning.

This report highlights the perceptions of parents of a mobile generation, from preschoolers through high school-age students. Given schools' increasing interest in engaging students with mobile learning—during and beyond the school day—and in "bring your own device" (BYOD) models, parents more than ever could be key partners in contributing to this new frontier in learning.

Parent perceptions matter. Their support and influence can smooth the way for educational technology in schools and help overcome the limitations of school coffers, without which digital initiatives can stall. This study underscores a converse relationship: educators' leadership in mobile learning can influence parent perceptions as well. Parents who report that their children's schools use mobile devices for classroom learning have much stronger positive perceptions than other parents do about the learning benefits. Seeing, perhaps, is believing.

Summary of Key Findings
Mobile Device Ownership, Use and Attitudes

Parents of students who are required to use mobile or portable devices in school, and "super users," are the most positive about the potential of these devices for learning and education.

- **The vast majority of children at all grade levels—preschool (pre-K) through 12th grade—have access to an array of technology at home, including mobile devices.** For the most part, family ownership of technology changes, in terms of the types of devices owned, with the stages of children's development.

- **Most children use many types of mobile devices—and they use them often.** Notably, girls are more likely to use many types of mobile devices than boys. Even many parents of preschoolers (rarely surveyed on this topic), report that their children use multiple mobile devices. Some children, however, aren't using any mobile devices at all, even though more than half of these nonusers' parents own mobiles.

- **Parents' attitudes about mobile learning differ, depending on children's grade level and gender.** Differences in perceptions show up as well between parents of children whose schools embrace mobile learning and those whose schools don't, and between parents of children who regularly use multiple devices and those whose children don't.

- **Majorities of parents believe that mobile devices and applications offer fun, engaging ways of learning, connecting and communicating.** When it comes to mobile devices and education, most parents believe that these devices open up learning opportunities, benefit students' learning and can engage students in the classroom. Many parents also believe that mobiles and apps teach academic skills and content. Along with parents whose children are required to use devices in school, and parents of children who regularly use multiple devices, parents of younger children and parents of girls have the most positive attitudes.

- **Still, despite their interest in mobiles for learning, parents of K–12 students are finding that most of the mobile apps and content their children use regularly are "purely entertainment."** Parents of pre-K children, on the other hand, perceive the most educational value from the mobile apps and content their children use regularly.

Mobile Devices at School

- **By high school, half of all students (51 percent) carry a smartphone to school with them every day.** So do more than one in four middle school students (28 percent). Overall, 25 percent of all K–12 students take a smartphone to school every day, according to their parents, including 8 percent of students in grades 3–5.

- **Sixteen percent of all K–12 parents, and almost one in four parents of high school students (24 percent), report that their child's school allows students to use family-owned mobile devices in the classroom—often called a "bring your own device" (BYOD) approach.** Given that half of all high school students take a smartphone to school every day, however, some students seem to be powering down their devices in the classroom, or using them under the radar.

- **Some schools require students to use portable or mobile devices—which could be school- or family-owned—in the classroom.** This could be a signal that technology that can move between homes and schools could become essential for academic learning. Overall, 17 percent of K–12 parents report that their child's school requires students to use at least one portable device (such as a laptop, notebook, netbook or ultrabook) or mobile device in the classroom.

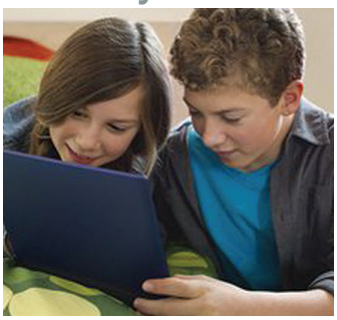
- **More than half of parents believe that schools should make more use of mobile devices in education.** At the same time, many parents look to teachers and schools for guidance on helping children use mobiles and apps for educational purposes.

- **Parents aren't waiting for schools to make the move to mobile learning.** Already, 45 percent of parents report that they plan to buy, or already have bought, a mobile device to support their child's learning. Fifty-six percent of parents say they'd be willing to purchase a mobile device for their child to use in the classroom if the school required it.

Given the fast-changing mobile landscape, especially the increasing functionality of mobile and hybrid devices, parent preferences—and school requirements and policies—might change just as rapidly. Whatever the device, it could be that schools are approaching a tipping point in their acceptance of and readiness to productively use mobile devices for learning.

Based on the findings, this report offers concluding remarks and recommendations for educators, industry and mobile learning advocates to support and partner with families, continue researching a fast-changing issue, and demonstrate the value of mobiles as tools for learning.

About the Study



The findings in this report are based on a robust, nationally representative survey of parents of children aged three to 18, conducted by Grunwald Associates LLC in collaboration with the Learning First Alliance and with generous support from AT&T. Basic technology ownership and usage data were collected from 2,392 parents, representing 4,164 children.

This larger sample was screened and distilled to a core sample of 925 parents, who completed the full survey, which was conducted online. To ensure an adequate sample of parents of preschool-age children, 54 additional interviews were conducted with parents of three- to five-year-olds who use mobile devices, either enrolled or not yet enrolled in preschool programs.

Quotas were set for the core sample population to match the composition of the U.S. population of parents by household income, ethnicity and geographic region. This sample composition also was balanced to match U.S. Census data on child ages and grade levels, based on National Center for Education Statistics data on the population of pre-K–12 public school students. Parents were invited to complete the web-based survey by email. The survey was conducted in November 2012.

All differences reported between groups of parents in this report are statistically significant at the 95 percent level of confidence ($p < 0.05$). Additional directional data are reported to indicate noteworthy trends.

For this study, Hypothesis Group managed the field research and initial analysis. Li Kramer Halpern and Tom de Boor of Grunwald Associates led the analysis and provided guidance throughout the study.

Living & Learning with Mobile Devices: What Parents Think About Mobile Devices for Early Childhood and K–12 Learning is available to download at ***www.grunwald.com/reports***. A more detailed market research report based on this survey, including findings of interest to industry, is available commercially from Grunwald Associates. See ***http://grunwald.com/reports/mobile-learning-study.php***.

Defining Terms

To ensure parents had a consistent basis for responding to questions about different types of technology, the survey provided them with these definitions and examples:

- Mobile devices—wireless handheld devices that use Wi-Fi, 3G or 4G to connect to the Internet, many of which use an operating system such as iOS, Windows or Android, and can run various types of apps. Examples include smartphones, tablets, e-readers, and the iPod Touch.
- Portable devices—laptops, notebooks, netbooks, ultrabooks.

Key Findings

Technology Ownership

A Constellation of Mobile and Other Devices at Home

The vast majority of children at all grade levels—preschool (pre-K) through 12th grade—have access to an array of technology at home, including mobile devices and computers. But the number and type of devices owned differs depending on students' grade level and household income.

Seventy-seven percent of families have at least one smartphone, and almost half (46 percent) have at least one tablet. Tablet ownership isn't just for the tech savvy or for those who tend to buy the next new shiny object, either; 44 percent of parents who report that they can be intimidated by technology, or who tend to hold onto electronic devices until they break, or who aren't among the first of their friends or family to buy the latest technology, already own tablets.

Parents with high school students (grades 9–12) report higher ownership of portable computers, MP3 players and the iPod Touch. Parents of students in grades 3–5 report higher ownership of handheld gaming devices, tablets and e-readers, and parents of pre-K children (ages three to five) report the highest ownership of smartphones. Even low-income families ($25,000 or less) own 3.3 devices, on average, including portable and desktop computers and mobile devices. High-income families ($150,000 or more) own almost twice as many—6.2 on average.

The takeaway here: Family ownership of technology tracks with the stages of children's development. The exception is smartphone ownership among pre-K parents.

Many children are using many different devices—and using them often. Even some pre-K children are using multiple devices. Smartphones are the most commonly used mobile device; 43 percent of all children (pre-K–12), and 60 percent of high school students, use a smartphone. One in three children (34 percent) use tablets. Children use most devices daily or weekly, with smartphones the most commonly and frequently used device.

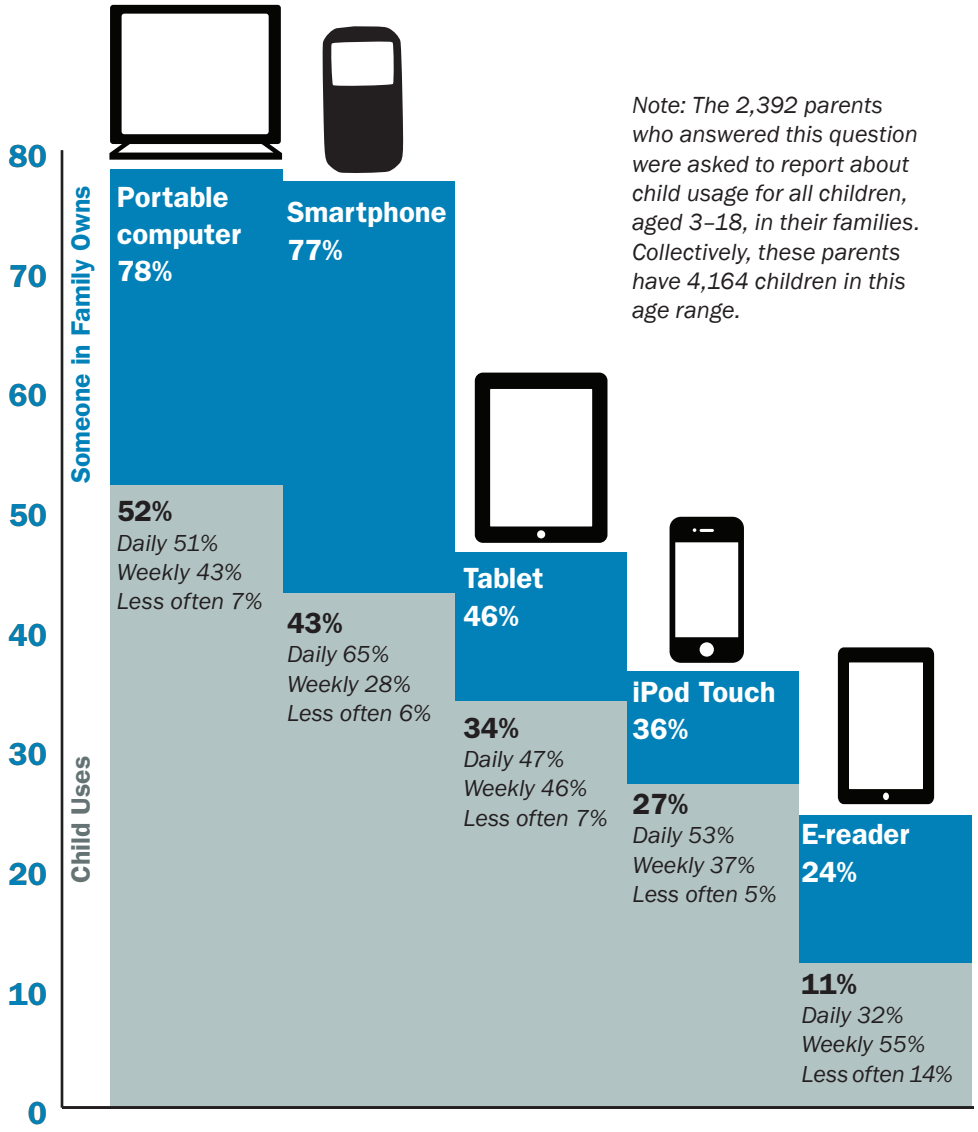
Older students (grades 9–12) are more likely to use portable computers, smartphones and MP3 players; younger students (K–2) are more likely to use tablets.

Girls are more likely than boys to use many types of mobile devices. Girls are more likely to use mobile devices in general (75 percent of girls reportedly use mobiles vs. 67 percent of boys). They're also more likely to use specific devices, including tablets (39 percent vs. 30 percent) and e-readers (16 percent vs. 7 percent).

Families share ownership and use of most mobile devices—contrary to some expectations that mobiles make a 1:1 world. Parents are more likely to say they are the primary owners of smartphones (58 percent) and tablets (56 percent), but many share the use of devices they own with their children.

Fewer families own e-readers, but those that do report equal ownership (in families that own e-readers, 42 percent of parents report that they own these devices; 42 percent say their children do). The iPod Touch is the standout as a true child-owned device. Eighty-three percent of parents whose children use an iPod Touch say their child is its primary owner; 13 percent say they own this device. Figure 1 shows family technology ownership of common devices and child use of these devices.

Figure 1. **Family Technology Ownership and Child Use, Pre-K–12**



Source: Grunwald Associates LLC

One in Five Children Don't Use Any Mobile or Portable Devices

- Almost one in five children (18 percent) don't use any family-owned mobile or portable devices. Younger children are most likely to be nonusers, with 29 percent of K–2 parents and 16 percent of parents of students in grades 3–5 reporting that their children don't use any family-owned mobile or portable devices. Still, 18 percent of middle school students and 9 percent of high school students are nonusers of these devices as well, their parents report.

- This doesn't mean that families of nonusers don't use any technology, or that their parents don't own portable or mobiles devices; 52 percent of parents of nonusers report that they have smartphones, and 60 percent say they have some type of mobile device in their homes.

- Parents of nonusers report mixed views about mobile devices. The majority of these parents (61 percent) completely or somewhat agree that mobiles open up learning opportunities that their child didn't have before. These parents also agree, though not as strongly as other parents, that mobile devices have the potential to provide many learning benefits. On the other hand, parents of nonusers are less likely to agree that mobile devices are a great way to engage students in the classroom. More than one in four parents of nonusers (28 percent) completely or somewhat disagree with this potential benefit, compared to 17 percent of parents overall.

- Parents of nonusers are less willing to be responsible for school-owned devices; only about one-third of parents of nonusers (31 percent) say they are willing to be responsible for school-owned devices, compared to about half of parents (51 percent) overall.

- Their parents are less likely to have a college degree and less likely to be enamored or savvy with technology.

Mobile Learning

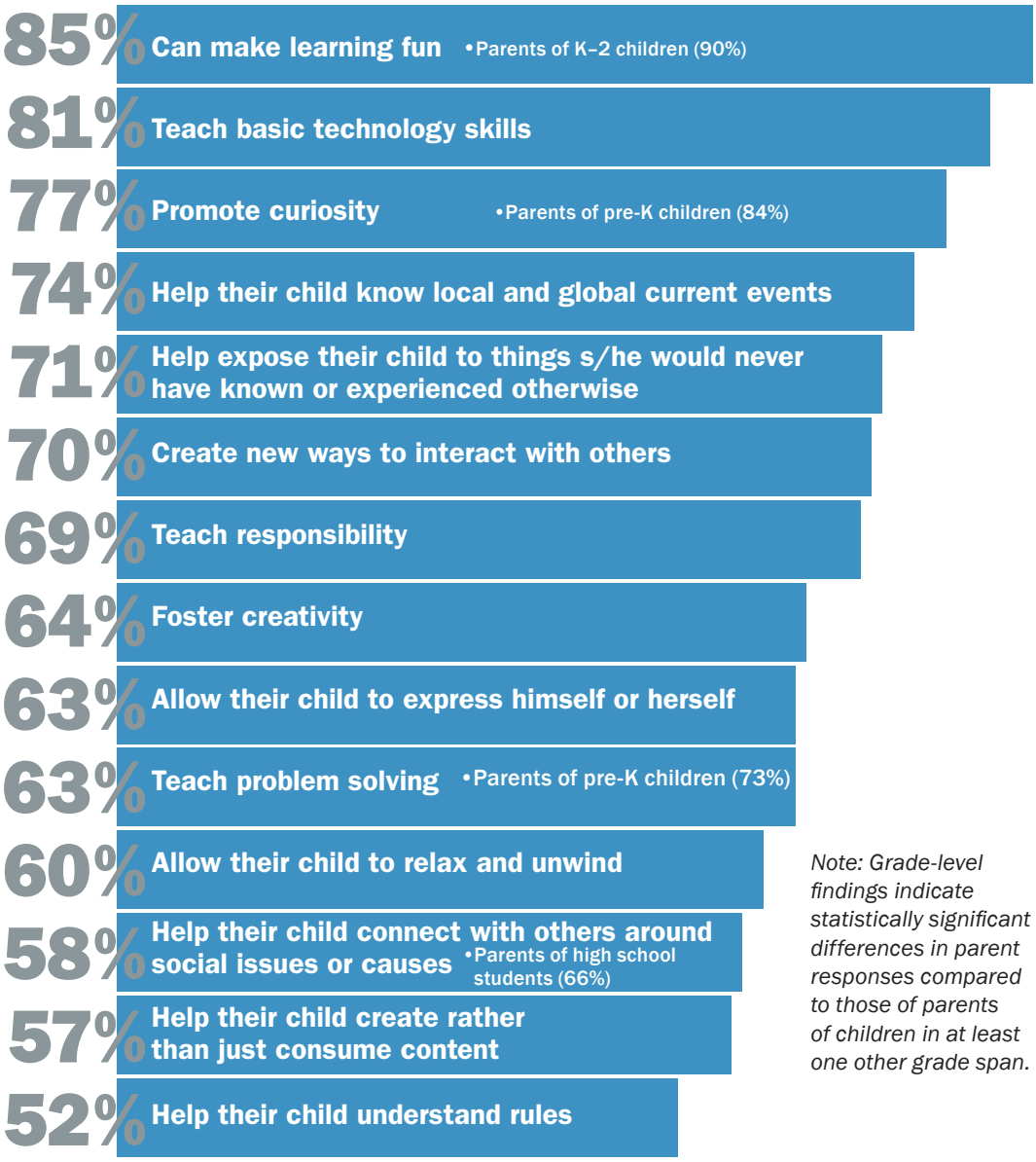
Seeing the Potential for Devices and Apps as Learning Tools

Parents of students who are required to use mobile or portable devices in school, and "super users," are the most positive about the potential of these devices for learning and education.

Many parents think that mobile devices and applications offer fun, engaging ways of learning, connecting and communicating. Many parents completely or somewhat agree that mobiles and apps build a range of creative

Figure 2. **Mobiles and Apps Build Creative and Life Skills**

Percentage of Parents Who Completely or Somewhat Agree That Mobiles and Apps …



Note: Grade-level findings indicate statistically significant differences in parent responses compared to those of parents of children in at least one other grade span.

Source: Grunwald Associates LLC

and life skills. The strength of this agreement ranges from 85 percent of parents who say that mobile devices can make learning fun to 52 percent who say that mobiles help their child understand rules.

For some skills about which they were asked, there are no significant differences in the levels of agreement among parents of children at different grade levels. For other skills, grade-level differences show up. Parents of young students (K–2) most strongly agree that mobiles and apps can make learning fun, promote curiosity and teach problem solving. Parents of middle and high school students most strongly agree that mobiles and apps can help them connect and communicate with their child. The across-the-board perceived benefits, and the standout differentiators by grade levels, are shown in Figure 2.

The finding that almost six in 10 students (58 percent), including two-thirds of high school students (66 percent), reportedly can use mobiles to connect around social issues and causes is worth noting as well. Children seem to be using mobile devices as a way to learn about, and perhaps participate in and advocate for, issues that are important to them in the world.

Parents of Younger Children More Bullish on Value of Mobile Apps and Content

Parents of younger students are more likely to report that mobile apps and content promote curiosity, foster creativity and teach problem solving. These parents also are more likely to report the benefits of mobiles for teaching academic content, including reading, math, science and foreign languages, as shown in Table 1.

Table 1. **Educational Value of Mobile Apps and Content, by Grade of Child**

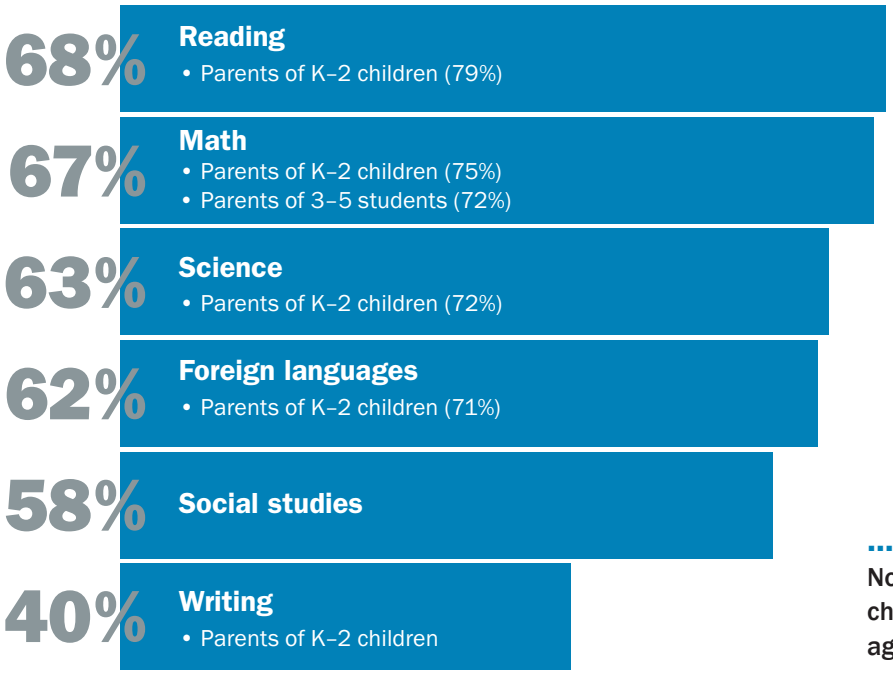
	Parents Who Completely or Somewhat Agree, by Grade of Child				
Learning Benefit	***K–2***	***3–5***	***6–8***	***9–12***	***Total***
Promote curiosity	**84%**	74%	70%	77%	76%
Foster creativity	**71%**	62%	58%	64%	64%
Teach problem solving	**73%**	62%	56%	59%	63%
Teach reading	**79%**	69%	63%	62%	68%
Teach math	**75%**	**72%**	63%	59%	67%
Teach science	**72%**	60%	59%	60%	63%
Teach foreign languages	**71%**	60%	59%	59%	62%

Note: Boldfaced percentages indicate statistically significant differences in parent responses compared to those of parents of children in at least one other grade span.

Source: Grunwald Associates LLC

Figure 3. **Mobiles and Apps Help Teach Academic Content and Skills…**

Parents of younger students have stronger perceptions about the benefits of mobiles and apps for teaching academic content and skills.



…and School-Related Skills

No matter what grade their child is in, parents express close agreement that mobiles and apps can help document their child's schoolwork and progress.

Note: Grade-level callouts indicate statistically significant differences in parent responses compared to those of parents of children in at least one other grade span.

Source: Grunwald Associates LLC

Mobile devices and applications help teach academic content and skills, most parents say. Parents completely or somewhat agree that mobile devices and apps can help teach reading, math, science, foreign languages and social studies. The strength of this agreement ranges from 68 percent of parents, including 79 percent of K–2 parents, who say that mobiles help teach reading to 58 percent of all parents who say that mobiles help teach social studies. Parents of younger students report stronger agreement about the benefits for every subject except social studies. A substantial proportion of parents also believe mobiles and apps can help teach writing skills.

Parents also report that mobiles and apps help build developmental and basic academic skills. Not surprisingly, parents of younger children are more likely than parents overall to report these benefits. Notably, however, parents of children of all ages see the same potential of mobiles and apps for helping to document their child's schoolwork and progress. Figure 4 shows the levels of parent agreement about the school-related benefits of mobiles and apps, with grade-level differentiators.

Parents of students who are required to use mobile or portable devices in school, and "super users," are even more positive about the learning and educational potential, perhaps because they have more first-hand experience seeing what their children are doing and learning on mobile devices. Parents of students who are required to use mobile devices in the classroom report much stronger agreement about every potential learning benefit about which they were asked, from creative and life skills to school-related learning.

For these parents, the fact that educators are incorporating mobile or portable devices into their pedagogy seems to color their perceptions about mobile learning in a positive way. Double-digit differences are the norm between the perceptions of parents whose children's schools require mobiles or don't. Table 3 shows some examples of these differences.

Similarly, parents of "super users"—children who use at least three or more mobile or portable devices a few times or week or more and at least one mobile device daily—express stronger agreement than other parents about many potential learning and educational benefits as well.

When It Comes to Perceived Benefits of Mobiles and Apps, Girls Rule

Parents of girls report stronger benefits from mobile devices and applications than parents of boys. These benefits span the gamut, as shown in Table 2.

Table 2. **Benefits of Mobile Devices and Apps, by Gender of Child**

	Parents Who Completely or Somewhat Agree, by Gender of Child	
Learning Benefit	***Parents of Girls***	***Parents of Boys***
Can make learning fun	**89%**	81%
Help prepare my child to use other technology	**88%**	83%
Teach basic tech skills	**84%**	78%
Promote curiosity	**81%**	72%
Create new ways to interact with others	**76%**	64%
Teach responsibility	**75%**	64%
Teach reading	**73%**	63%
Teach math skills	**71%**	64%
Foster creativity	**68%**	60%
Teach science	**68%**	58%
Teach foreign languages	**66%**	58%
Encourage my child to read more	**66%**	60%
Build developmental skills	**67%**	60%
Allow my child to express himself/herself	**66%**	60%
Are a way for me (as a parent) to connect with my child	**62%**	55%
Help my child understand rules	**56%**	48%

Note: Boldfaced percentages indicate statistically significant differences in responses of parents of girls compared to those of parents of boys.

Source: Grunwald Associates LLC

Despite their strong positive attitudes about the potential of mobile devices for learning, parents of K–12 students consider most apps and content that their children use regularly "purely entertainment." Overall, parents of pre-K–12 students who have downloaded apps or content say 69 percent are purely for entertainment, while 31 percent have some educational value.

The perceived educational value of mobile content steadily decreases, and the "purely entertainment" perceptions increase, among parents of older children. Parents of K–2 students report that 59 percent of downloaded apps are purely for entertainment, compared to 65 percent for grades 3–5 students, 74 percent for 6–8 students and 76 percent for 9–12 students.

Parents of pre-K children are the exception. These parents say that 52 percent of the apps or content their children use regularly provide some educational value—the highest proportion among all parent groups.

Overall, when it comes to mobile devices and education, most parents believe (completely or somewhat agree) **that these devices open up learning opportunities** (71 percent), **benefit students' learning** (62 percent) **and engage students in the classroom** (59 percent). Thirty-nine percent of parents say that using mobile devices supports their child's learning regardless of the app used.

Still, parents are not completely won over. A substantial proportion (62 percent) believes that mobile devices can be a distraction, and there are indications that some parents feel that mobiles do not belong in school for this reason. Distraction or not, however, only one in four parents overall (25 percent) says that mobile devices aren't effective educational tools.

Table 3. **School-Required Use of Mobile or Portable Devices Is Associated With Parent Perceptions of Learning Benefits for Children**

	Parents Who Completely or Somewhat Agree	
Learning Benefit	***Child's School Requires Mobile or Portable Use***	***Child's School Does Not Require Mobile or Portable Use***
Can make learning fun	**93%**	83%
Promote curiosity	**90%**	74%
Help my child know local and global current events	**88%**	71%
Teach reading	**85%**	65%
Teach math	**84%**	64%
Teach responsibility	**83%**	67%
Teach science	**82%**	59%
Encourage my child to read more	**82%**	59%
Teach foreign languages	**80%**	59%
Help my child to excel or perform better in school	**77%**	50%
Teach social studies	**76%**	54%
Teach problem solving	**76%**	60%

Note: Boldfaced percentages indicate statistically significant differences in responses of parents whose child's school requires the use of mobile devices compared to parents whose child's school does not.

Source: Grunwald Associates LLC

Mobile Devices in School

Signs of Change—and Opportunities for Schools

Given the fast-changing mobile landscape, especially the increasing functionality of mobile and hybrid devices, parent preferences—and school requirements and policies—might change just as rapidly. Whatever the device, it could be that schools are approaching a tipping point in their acceptance of and readiness to productively use mobile devices for learning.

By high school, half of all students (51 percent) **carry a smartphone to school with them every day. So do more than one in four middle school students** (28 percent). Overall, 25 percent of all K–12 students take a smartphone to school every day, according to their parents, including 8 percent of students in grades 3–5.

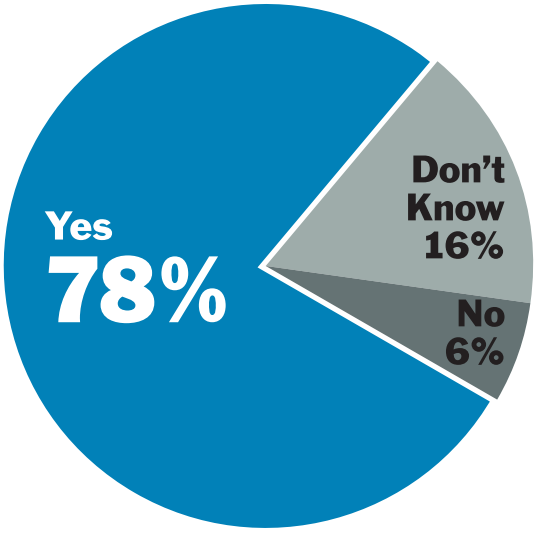
While smartphones are the most popular device for daily toting, some K–12 students bring other family-owned devices to school every day as well. Eight percent take an iPod Touch, 5 percent take a laptop or other portable device, 2 percent take a tablet, 2 percent take a handheld gaming device and 1 percent take an e-reader to school every day.

About one in six parents (16 percent) **reports that children are allowed to use family-owned mobile devices in the classroom—often called a "bring your own device" (BYOD) approach.** School permission to use mobile devices in the classroom is most often granted to high school students, parent report. Almost one in four parents of students in grades 9–12 (24 percent) report that their child's school allows students to use family-owned mobile devices in the classroom. Still, 72 percent of K–12 parents say their children are not allowed to use their own devices in school, as shown in Figure 5.

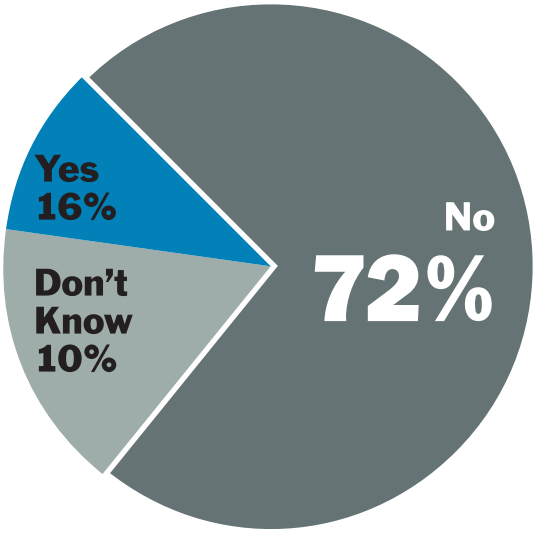
Most K–12 parents (79 percent) report that their child's school has a policy on the use of mobile devices in the classroom, while 15 percent of parents say they don't know if their child's school has a policy and six percent say there is no school policy. Parents' awareness of school policies increases among parents of older children, ranging from 70 percent to 83 percent for parents of K–2 and 3–5 students, respectively, to 90 percent to 93 percent for parents of students in grades 6–8 and 9–12, respectively.

Figure 4. **School Policies on Mobile Devices**

Percentage of K–12 Parents Who Say Their Child's School Has a Mobile Device Policy



Percentage of K–12 Parents Who Say Their Child's School Allows Students to Use Family-Owned Mobiles in the Classroom



Source: Grunwald Associates LLC

Some schools require students to use portable or mobile devices—which could be school- or family-owned—in the classroom. This could be a signal that technology that can move between homes and schools could become essential for academic learning. Overall, 17 percent of K–12 parents report that their child's school requires the use of at least one portable or mobile device in the classroom.

At this point, portable computers are the most required devices of the ones examined in this study, with 12 percent of K–12 parents reporting that their child's school requires students to use them, and smaller percentages reporting that tablets, e-readers, the iPod Touch or smartphones are required.

For their part, parents are divided about which devices have the most educational potential. Parents of younger children strongly prefer tablets; parents of teens believe laptops have the most educational value, by double-digit margins.

More than half of parents (52 percent) **completely or somewhat agree that schools should make more use of mobile devices in education**. Almost one-third of parents (32 percent) completely or somewhat agree that all schools should require mobile devices in the classroom—and 35 percent of parents say that mobile devices are a necessity, not a luxury, there. At the same time, 81 percent of parents say that they worry about the security or theft of mobile devices in school.

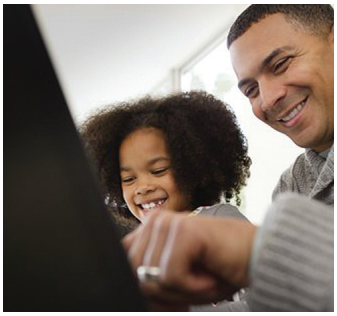
Parents look to schools for guidance on helping children use mobiles and apps for educational purposes. Seventy percent of parents completely or somewhat agree that teachers should recommend apps for students to use; 43 percent say they need help finding good educational apps for their children. Sixty-four percent of parents say schools should help students use devices safely.

Parents aren't waiting for schools to make the move to mobile learning. Already, 45 percent of parents report that they plan to buy, or already have bought, a mobile device to support their child's learning.

Parents' attitudes about paying for mobile devices for learning, meanwhile, vary. Seventy-eight percent of parents say that if schools require students to use mobiles, schools should provide the device. But 56 percent of parents also say they are willing to purchase a mobile device if their child is required to use it in the classroom, with parents of high school students the most willing to buy a required device.

Many parents also seem to care about equity in mobile learning. Fifty-five percent of parents completely or somewhat agree that mobile devices provide equal learning opportunities for all children. Parents' belief that schools should help pay for or provide devices, and their belief that it's best for all students to use the same kind of device for school purposes, also could be reflections of these concerns.

Conclusion and Recommendations



Overall, this study suggests that there is an unmet desire for more learning and educational value in the mobile world, both at home and in school.

Parents report that mobile devices and apps provide multifaceted learning benefits to their children, beginning in the preschool years. They strongly recognize the potential of mobile learning. Yet the potential remains largely untapped, both at home and at school.

That reality comes through in findings such as the sizable proportion of nonusers, parental sentiments about the potential for distraction, the dominance of entertainment-only apps, and the desire for schools to make greater use of mobile devices in education.

With the reality come openings for educational leaders and teachers. Parents already are seeing some schools providing more opportunities for students to use mobiles for learning with BYOD policies and even with the required use of devices. Parents want schools to help them provide guidance on mobile learning activities for their children. And parent involvement can have a big impact on technology decisions and programs. Educators have an opportunity to bridge the gaps between the perceived value and the reported use (or lack thereof) of mobile devices in classrooms—and for learning at home as well.

Schools aren't the only ones who could help boost the learning return on investment from mobile devices. Technology and content companies, along with mobile learning advocates, have much to offer to better educate the mobile generation. And it's clear that education offers rich opportunities to develop and enhance the mobile medium.

All stakeholders, including parents, educators and industry, need more sound data on the ways in which mobile devices are available and used—or not used—in classrooms. And everyone needs to know what's working.

Recommendations for Educators

- Model the safe, productive use of mobile devices as learning tools in practice.
- Partner with parents to make the case for mobile learning, develop mobile device policies and showcase best practices—particularly for parents who are not yet persuaded.
- Enlist the support of parents who tend to be the most positive about mobile learning, including parents of younger children, parents of "super users" and tech-savvy parents.
- Leverage the devices that students already have access to or are bringing to school (the BYOD approach). Rather than trying to be the sole provider of devices for all students, schools should consider taking a need-based approach and provide devices only for students who do not have them—and ensure that students' access is as equal as possible.
- Offer authoritative information and advice to parents and students on how to make better use of mobile devices and apps for learning, rather than for entertainment only, and how to use them safely—and differentiate this guidance for different grade levels.
- Do a better job communicating mobile device policies with parents—the "back to school" packet of information might not be enough.
- Share and learn from schools that already are offering mobile learning opportunities for their students. Connect with other educators via online communities of practice and other forums to exchange insights on best practices.
- Partner with industry to contribute to the development of mobile devices, apps and content that deliver robust educational benefits.

Recommendations for Industry and Mobile Learning Advocates

- Work with educators and education organizations to develop more educational content, apps and services for mobile devices, especially applications and services that leverage mobiles' unique capabilities, such as location-based offerings.

- Help parents and educators find educational offerings as easily as they do entertainment content. Provide better sources of information about what's available, in formats such as well-curated online databases or clearinghouses.

- Partner with schools to demonstrate the value—and measure the success and reach—of mobile devices as tools for learning. Consider scalable, replicable pilot projects or market tests and rich case studies about the lessons learned.

- Develop practical information and resources, such as toolkits and templates, which will help schools and parents work together to increase the educational benefits of mobile devices.

- Ramp up education research to learn more about how mobile devices and apps are used for learning, and to identify what works. Continue to conduct research with parents and students to ensure their needs and wants for mobile learning are met.

- Partner with education organizations to organize one or more national, distributed online events to showcase the potential of mobile learning at school and at home.

- Partner with parent organizations to encourage parents to leverage mobile technology for both formal and informal learning outside of school.

- Establish guidelines to communicate educational components in mobile apps and content so that parents and educators can easily recognize and evaluate mobile content.

About Grunwald Associates LLC

Grunwald Associates LLC is a full-service research and consulting firm whose work has informed the debate on a range of national policy issues. Grunwald offers an in-depth understanding of education, innovation and family technology use, combined with mastery of state-of-the-art research methodologies.

The firm specializes in challenging public and proprietary assignments for corporate, nonprofit and government clients. Services include sophisticated quantitative and qualitative research, including pricing simulation and product configuration, social media and community development, and messaging and strategic counsel.

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About Learning First Alliance

The Learning First Alliance (LFA) is a partnership of 16 leading education associations with more than 10 million members dedicated to improving student learning in America's public schools. LFA shares examples of success, encourages collaboration at every level, and works toward the continual and long-term improvement of public education based on solid research. Members include:

- American Association of Colleges for Teacher Education
- American Association of School Administrators
- American Association of School Personnel Administrators
- American Federation of Teachers
- American School Counselor Association
- Association for Middle Level Education
- International Society for Technology in Education
- Learning Forward
- National Association of Elementary School Principals
- National Association of Secondary School Principals
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