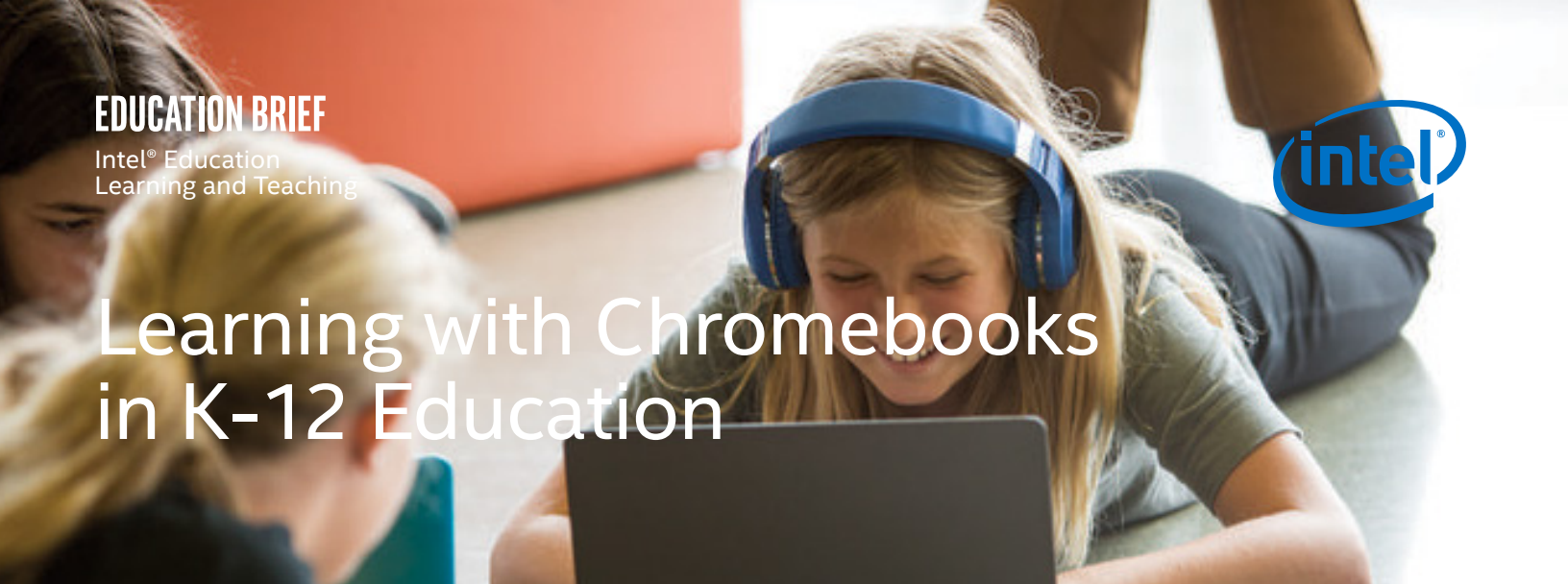# Learning with Chromebooks in K-12 Education

## Embracing the Challenge of Learning with Chromebooks

> "[Chromebooks support] engagement and motivation to get work done. Before the Chromebooks, if it [an assignment] wasn't a grade they wouldn't do it. Now it might not matter."
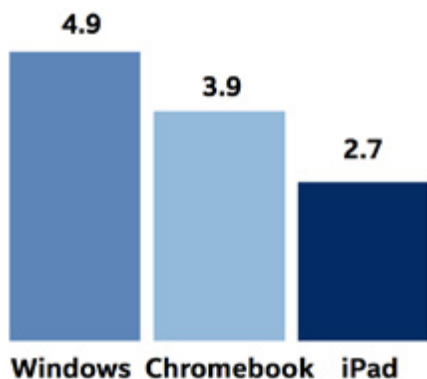>
> **- Steffan Ledgerwood, Teacher, Liberty High School, Hillsboro, OR[3]**

The past five years have seen a dramatic increase in the total number of devices sold to schools in the U.S. and throughout the world. According to IDC[1] Chromebook sales in the U.S. have steadily grown to overtake Apple* iPads*. The schools that have been the most successful at managing this transition have been the ones willing to confront the many challenges that large-scale technology adoption presents.[2] While price and performance have long been two of the most important factors of device selection, schools are increasingly evaluating additional criteria to ensure success.

### Intel-based Chromebook Evaluation Criteria

- **Price:** Intel-based Chromebooks are competitively priced;
- **Performance:** multitasking, watching videos, writing documents, gaming, and using Google Apps for Education* work best on Intel-based devices;
- **Manageability:** the device management console and cloud backup services make Chromebooks one of the easiest devices for IT (and teachers) to manage;
- **Assessment Ready:** both major U.S. test consortia have verified Chromebooks meet their requirements for secure online testing[3];
- **All-day Learning:** Intel-based Chromebooks stay charged for a full-day of use; and,
- **Security:** Chromebooks are safe devices that are virtually virus-free.

## Improving Student Outcomes

Intel-based Chromebooks support three key outcomes for educators, students, and administrators. These include:

1. Improving student engagement and achievement including outcomes on high-stakes exams;
2. Cost savings through affordable solutions that are easy to manage, deploy, and support; and,
3. Free productivity tools and access to secure, cloud-based resources and the Internet to support deeper learning and better achievement on tests.

**2014 U.S. Device Sales[4]**
Millions of Units

| Windows | Chromebook | iPad |
|---------|-----------|------|
| 4.9 | 3.9 | 2.7 |

1  http://the-digital-reader.com/2015/08/24/idc-chromebooks-gain-on-ipads-in-schools-but-apple-is-still-making-the-most-money/

2  www.k12blueprint.com/latest-news?type=2

3  www.oregonlive.com/hillsboro/index.ssf/2014/05/hillsboro_school_district_chro_1.html

4  https://support.google.com/chrome/a/answer/3273084

http://www.k12blueprint.com/success-stories

## Intel-based Chromebook Success Stories

### Personalizing Learning in Oakland, California, with Intel-based Chromebooks[5]

Having an Intel-based Chromebook was very important to the CTO of Oakland Unified School District. The affordable price tag was only one factor. Issues including durability, equity, and security were all key criteria for choosing the Dell* Chromebook 11.

### Planning for Equity, Achievement, and Implementation in Richland 2[6]

The Richland 2 School District in South Carolina spent over a year planning for their one-to-one technology roll-out before they even discussed technology and which device they wanted to purchase. Intel planning support and Project RED[7] were integral to the success of Richland 2.

### Supporting Inclusionary Practices and Authentic Learning in Chicago[8]

CCSD21 is located in a suburb of Chicago. Their CIO recognized the importance of challenging each student to solve problems. To work towards this goal, the district chose to go one-to-one – providing students with tools that connect them to their world on a daily basis.

## Less Time Waiting, More Time Learning with Intel-based Chromebooks

Intel works closely with Chromebook device manufacturers as well as Google* to make sure that Intel-based devices meet or exceed the needs of educators in the classroom including:

1. Intel has the broadest array of Chrome devices with 30+ designs from leading manufacturers encompassing Chromebooks*, Chromebases* and Chromeboxes*;

2. Intel-based Chromebooks deliver the best user experience because of continuous optimizations of the Chrome OS for Intel Architecture. Moreover, for all Intel device fleets, there is no worry when provisioning apps from the admin console;

3. Intel offers extensive benefits for educators including teacher development, free learning apps, and planning resources to make the education experience on a Chromebook even better; and

4. Intel education experts work collaboratively with solution providers to help schools choose the right device for their environment.

"One of the best things about the Chromebooks is being able to share and simultaneously collaborate, revise, and work on the same document. This allows students to complete an assignment or project without having to meet up outside of school.

**– Justyna Chojnowski, Student,**
**East Leyden High School, Franklin Park, IL[9]**



"The iPad* may get all the press, but Chromebooks just keep winning over schools. Apple* is the hare, and Google is the tortoise. Slow and steady is winning the race, at least in education."

**– Chris Hoffman, PCWorld[10]**

5 http://www.k12blueprint.com/personalizing-learning-oakland-ca-help-chromebooks
6 http://www.k12blueprint.com/1two1-richland-county-school-district-two
7 www.one-to-oneinstitute.org/introducing-project-red
8 www.k12blueprint.com/distrct-wide-collaboration-moves-everyone-forward-wheeling-illinois
9 http://dangerouslyirrelevant.org/2012/12/11-the-student-perspective-on-chromebooks-at-leyden-high-schools.html
10 www.pcworld.com/article/2855768/why-chromebooks-are-schooling-ipads-in-education.html
http://www.k12blueprint.com/success-stories

## Transforming Teaching and Learning with Chromebooks in K–12 Education

Chromebooks support transformed teaching and learning practices by enabling educators and students to move along a continuum of practice from basic, replacement activities (e.g., digital versions of print materials) through enhanced or amplified models (e.g., interactive online forms in a flipped classroom) all the way to demonstrations of mastery and curricular transformation (e.g., personalized, self-directed learning)[11]. This bi-flow of replacement-amplification-transformation requires a connected device like a Chromebook that allows students, teachers, educators, and parents to easily collaborate, communicate, and create content and discourse around a student's needs. For over fifteen years, Intel has been committed to supporting just this sort of educational transformation brought about by effective technology integration. Professional development curricula like the Intel® Teach Elements courses and the Intel Transforming Learning courses were developed by educators with a focus on research-based best practices including models such as the TPACK framework.[12]

## How Intel Can Help

Intel has created a variety of end-to-end tools and resources to help educators interested in Chromebooks to help them:

1. Evaluate and determine the right device for learning;

2. Define and set their vision for technology implementation;

3. Audit and assess their schools infrastructure and integration needs;

4. Deploy apps and resources specifically designed for learning; and,

5. Train educators and coaches using research-proved-best known methods.

## Learn More

Technology deployment and infrastructure assessment, evaluation, and support.

Visit the K-12 Blueprint at www.k12blueprint.com/chromebooks to learn more about Intel's Chromebook solutions for K-12 Education.

Intel Transforming Learning: Learning with One-to-One 2-day professional learning course.

Learning in Context Chrome OS apps aligned to Common Core State Standards.

Read With Me Chrome OS app to support early elementary literacy.

National Tech Goes Home Chrome OS extension to support parents new to technology