The Advantages of 1:1 Technology in Driving Curriculum Forward

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INTRODUCTION

In the U.S. educational sector, 1:1 student computing was introduced to K-12 schools in the late 1990's as technologies progressed and were made increasingly available to school districts. Maine became the first state to establish a statewide 1:1 program in 2002, and since then the trend has continued to evolve.

In fact, in 2013 and 2014 alone, schools across America purchased 23 million Chromebooks, tablets and laptops for student and faculty use – both in the classroom and sometimes at home. Chromebooks in particular, which commanded 39 percent of the U.S. market share for mobile K-12 computing devices, have held the title of bestselling device since 2014.

In areas of the U.S. where 1:1 technology is still seen as an improbable goal, schools may wonder whether or not this type of innovation is necessary.

However, researchers from Michigan State University concluded – from data based on 15 years' worth of data collection – that efforts by K-12 schools to provide every student with a computing device increases student achievement and boosts 21st century skills.

The researchers found that using 1:1 laptop programs led to a statistically significant positive impact on student test scores in English/language arts, writing, math and science. Furthermore, giving students laptops also led to other advantages for learning, including more project-based instruction, improved student engagement and better communication between teachers and their classes.

Generally, the overarching goal of 1:1 technology – in any form – is to enable teachers and programs to deliver differentiated and individualized content to students. This way, students will feel more empowered to complete more complex and creative work that reflects their personalized levels of knowledge, capabilities and development.

In this white paper, NEOnet will discuss the ways in which 1:1 educational technology (ed-tech) drives curriculum forward, especially in terms of tracking and customizing student progress.

THE CORE OF ED-TECH: DIFFERENTIATING & INDIVIDUALIZING CONTENT

The buzzword "differentiation" is pervasive in the educational sector. So, too, is the phrase "individualized instruction," which has become a popularized way to discuss successful instructional methods for 21st century students.

Often, educators find it challenging to separate and define the two terms – but both can be used as part of the same instructional strategy and emphasized in a 1:1 learning environment.

Differentiated instruction is an awareness of the various ways that the same concept can be taught; in other words, it involves an understanding of pedagogy, freeing educators to use whatever approaches or resources they see fit to reach specific academic goals.

On the other hand, individualized instruction allows students to take ownership of their learning processes and is calibrated to meet the unique pace of each learner.

❝ If differentiation is the *how*, then individualization is the *when*. ❞

In a 1:1 classroom, the greatest advantage that quickly becomes apparent is the harmony between both instructional terminologies. With devices provided to each student, teachers are no longer limited to textbooks, workbooks or numbers of copies. Instead, the unlimited sources of content on the internet means teachers can differentiate their instruction in a manner that individualizes assignments and focuses on long-term student development.

For example, teachers can gauge from the first days of class whether or not a student's concentration improves by providing both visual and textual assignments. Based on student performance, teachers can then approach future assignments privately (individualization) and create content that includes the most engaging methodologies for their particular students (differentiation).

In this regard, 1:1 technology powers curriculum far beyond its previous capabilities. Now, a student's education isn't merely something that just *happens* to the child—it is something that occurs as a result of the student's individual activities with the intent of engaging students on a level that actually teaches them *how* to learn.

OTHER ADVANTAGES OF 1:1 TECHNOLOGY

In addition to tailoring learning to the preferences and interests of each student, there are many other advantages to 1:1 technology, including but not limited to:

- **Improved mastery of technology** – This encompasses the wide variety of uses that 1:1 devices offer students, such as writing, research, note-taking, completing assignments and reading. Mastering technologies like tablets and laptops at a young age is a valuable 21st century skill that will propel students forward.

- **Better relationships between students and teachers** – Student-teacher communications (via email and Google Docs, for example) and parental involvement in their children's school work increases with the use of 1:1 devices. Depending on a teacher's familiarity, NEOnet can work with educators to develop new strategies and training, if necessary. Ed-tech resources allow teachers to build a better rapport with their students, as they aren't limited to seeing each other face-to-face. Now, distance learning is possible—meaning remote learning from home and tracking student progress over time.

- **Long-term financial savings** – Many schools are wary of implementing 1:1 classrooms due to the high initial costs involved. Buying a new tablet or Chromebook for every student can be an expensive ordeal, but when districts consider the myriad benefits, the investment is well worthwhile. To manage this financial strain, NEOnet offers budgeting assistance to guide districts through the initial purchase and plan for repairs and replacements over time. Additionally, NEOnet's consortium purchasing plan provides access to a variety of vetted devices and uses the leverage of larger group purchases to negotiate lower prices.

NEONET'S 1:1 PROMISE TO SCHOOL DISTRICTS

With expertise in ed-tech innovation, NEOnet is proud to offer school districts anything they need to integrate 1:1 learning, such as training for teachers, new curriculum ideas and technical support, to name a few.

If your district has recently purchased Chromebooks for an entire school building or grade level, NEOnet can provide educational sessions on Google Suite, classroom management tools, virtual field trips, digital whiteboards and more. We can also fine-tune your lesson plans, adding inventive, interactive projects and skill-building activities for students through programs like EdCite, Edulastic, Nearpod, Peardeck, PollEverywhere, Trello, Quizlet and YouTube.

No matter your need, NEOnet can promise to bring your school district up to speed with the latest 1:1 tools and methodologies, resulting in a harmonious blend of differentiation and individualization, of real and digital.