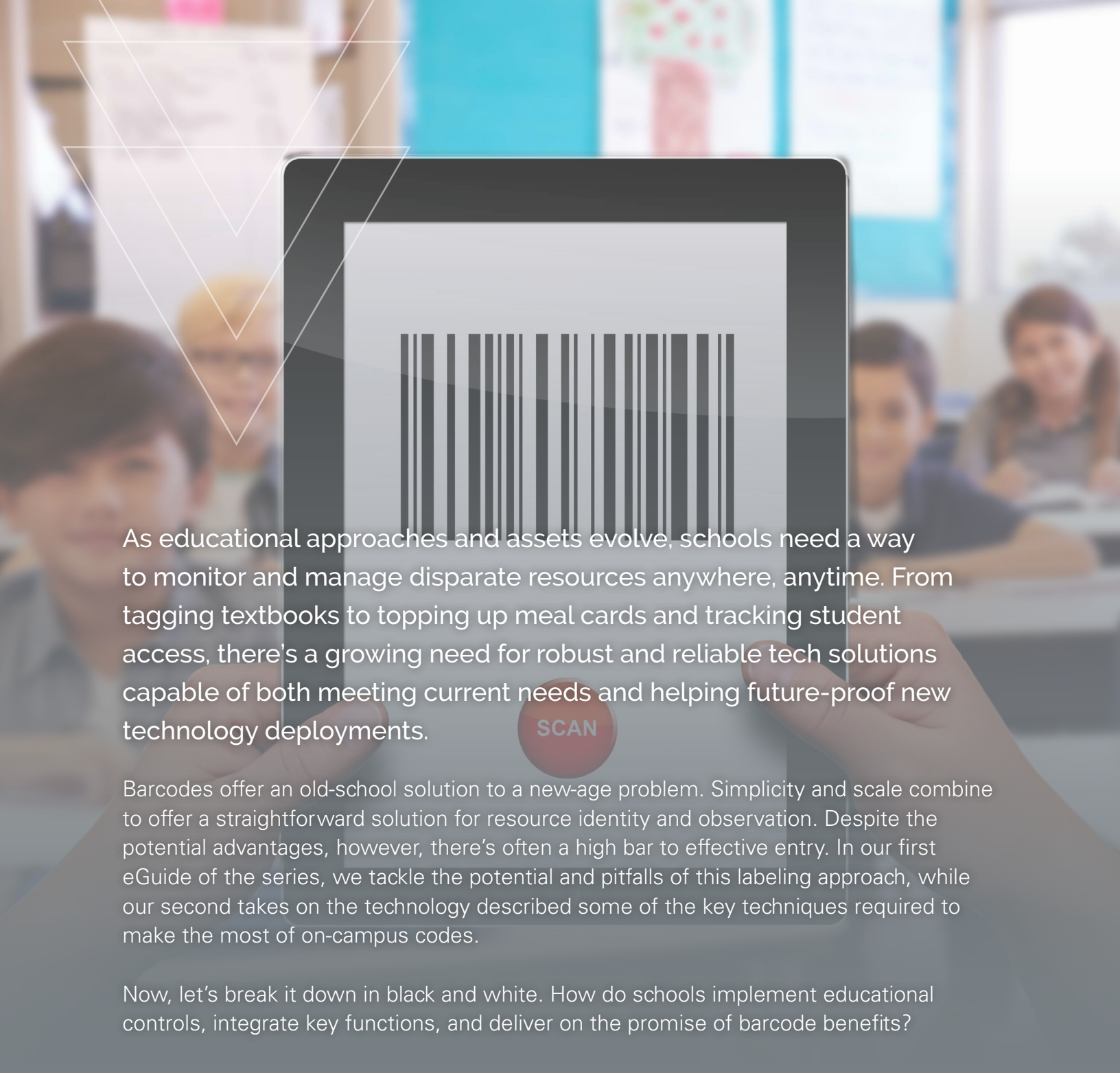# Barcodes in Education: The Benefits in Black and White

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As educational approaches and assets evolve, schools need a way to monitor and manage disparate resources anywhere, anytime. From tagging textbooks to topping up meal cards and tracking student access, there's a growing need for robust and reliable tech solutions capable of both meeting current needs and helping future-proof new technology deployments.

Barcodes offer an old-school solution to a new-age problem. Simplicity and scale combine to offer a straightforward solution for resource identity and observation. Despite the potential advantages, however, there's often a high bar to effective entry. In our first eGuide of the series, we tackle the potential and pitfalls of this labeling approach, while our second takes on the technology described some of the key techniques required to make the most of on-campus codes.

Now, let's break it down in black and white. How do schools implement educational controls, integrate key functions, and deliver on the promise of barcode benefits?

IN THIS EGUIDE, WE WILL EXPLORE:

> The Importance of Accuracy
> Reading Damaged Barcodes

> Capturing Data Faster
> Mobile-Ready Data Collection
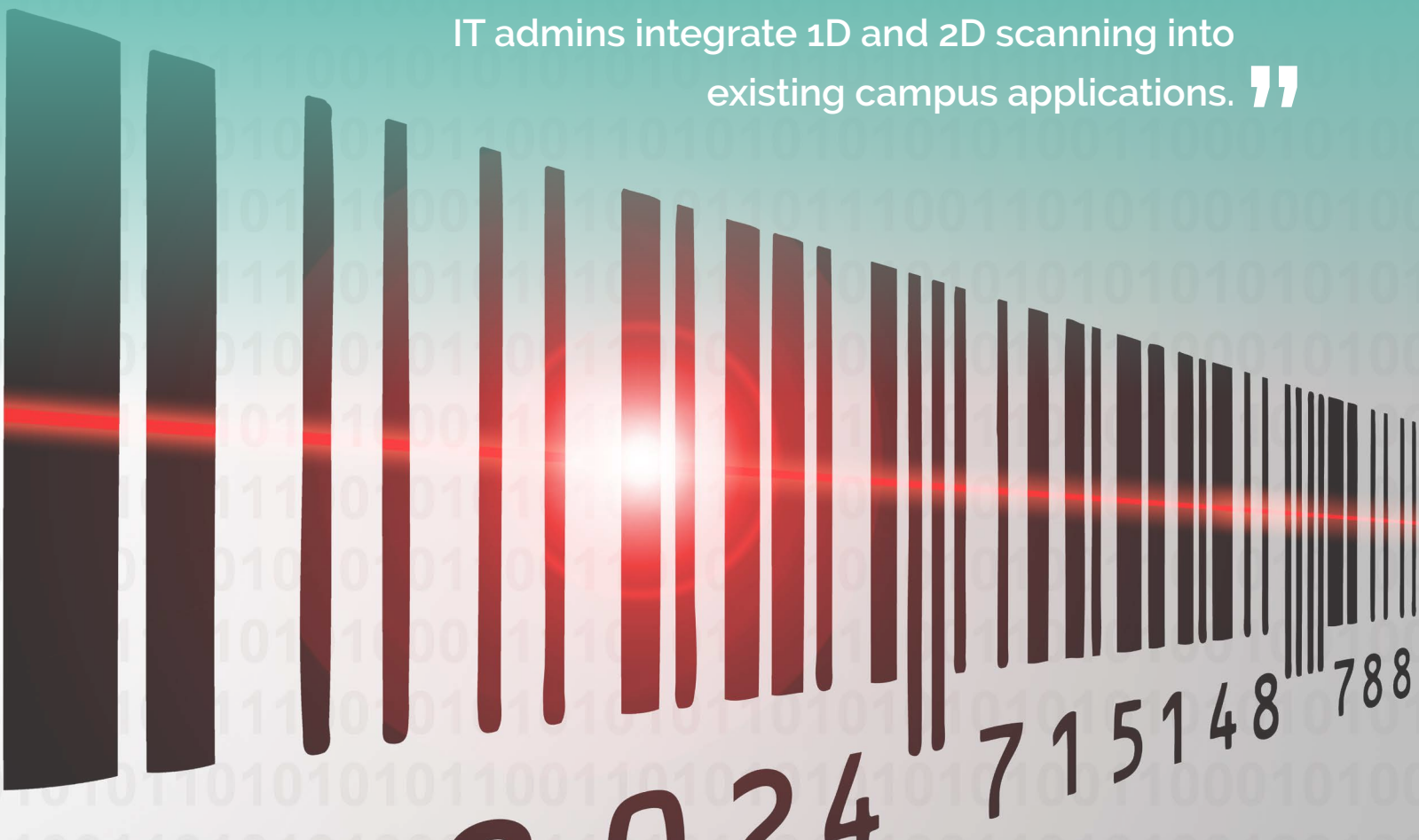
The Importance of Accuracy

Accuracy matters when reading barcodes in education. If student ID cards aren't scanned correctly, the results range from inconvenient — students might accidentally be marked absent — to problematic if incorrectly-scanned codes prohibit students from signing out educational materials or adding more money to campus meal cards.

With many post-secondary schools now leveraging student IDs to serve multiple functions including contactless payments, parking access, and library borrowing, there's no room for error. Barcodes accuracy is top priority.

Accusoft's Barcode Xpress streamlines the process of barcode scanning without sacrificing accuracy. Just a few lines of code let university IT admins integrate 1D and 2D scanning into existing campus applications. With confidence values and false-positive elimination tools, schools receive more accurate barcode reading, making it easier for students to access critical services and enabling staff to monitor resource use.

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Reading Damaged Barcodes

Barcode damage happens. Poor printing methods or misaligned codes can cause unexpected wear and tear, while barcode-branded student ID cards carried in wallets, purses, or pockets day after day and week after week will eventually start to fade. Add in the occasional cracked or chipped card — combined with students often too busy to replace their card until it fails to work entirely — and damaged barcodes are a fact of daily life for educational institutions.

The result? For a barcode system to work at scale for school applications, they must be able to handle barcodes that aren't clean, pristine, and perfect. Barcode Xpress is designed with potential defect detection in mind, providing schools natural defense against less-than-ideal barcodes with support for:

POORLY PRINTED OR SCANNED BARCODES
Even if barcode suppliers misalign codes or use ink that can't stand the rigors of student life, applications with Barcode Xpress can still read images.

BLACK NOISE
Extra pixels are no problem for Barcode Xpress.

WHITE NOISE
Missing pixels won't impact scanner effectiveness.

TYPICAL WEAR-AND-TEAR
Accidental erasures, incorrect checksums, low resolution, and white line streaks are all handled and corrected automatically.

While no barcode lasts forever, Accusoft's solution prolongs the usable lifespan of student IDs and makes it easier for schools to get barcode programs up-and-running.

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> " Barcode Xpress provides the scope of barcode recognition necessary, including support for over 30 types of barcodes including 1D, 2D, postal codes, and patch codes. "

Capturing Data Faster

As noted by recent research from the Pacific Journal of Science and Technology, barcode solutions for large-scale scanning projects such as attendance management "are easy to implement, inexpensive in terms of cost, and effective in terms of reliability and efficiency."

But these benefits only materialize if scanners are capable of handling any type of barcode in any situation. While 1D barcodes might be enough for basic student attendance, on-campus meal purchasing might rely on QR codes and more secure applications. For example, test booklet scanning may leverage complex 2D barcodes for enhanced security.

Barcode Xpress provides the scope of barcode recognition necessary, including support for over 30 types of barcodes including 1D, 2D, postal codes, and patch codes. In addition, it adds the speed required to verify multiple barcodes in milliseconds.

Try it for yourself. Quickly identify single barcodes from mixed content documents, or discover the ability of Barcode Xpress to locate and decode multiple barcodes on a single document. Better yet? Upload your own document and watch the SDK read any barcode in any orientation anywhere on the page.

Mobile-Ready Data Collection

Barcodes offer the big benefit of complex information encoding at low cost — black bars and white spaces of varying thickness can represent a host of information states on ID cards, paper documents, or educational resources.

The challenge? While school budgets may cover barcodes, there's often less money available to outfit teachers and classrooms with cutting-edge barcode scanners. This creates a performance paradox. Barcodes contain the information necessary to streamline school operations, but if school staff don't have the right tools to read them, they're simply a black and white waste of space.

Here, Accusoft helps bridge the gap with Barcode Xpress Mobile. Schools can easily integrate barcode scanning functionality into any mobile phone or tablet using the Android operating system or iOS, making it easy to quickly and accurately read barcodes anywhere on campus.

The Barcode Xpress Mobile SDK download contains everything you need to get started including sample code with camera integration, support for 30 types of barcodes — including those that are broken or damaged— and the ability to either leverage Accusoft's default user interface or easily customize your own.

Wherever, whenever, whatever. That's the promise of barcodes in document management at scale. It's the ability to integrate multiple ID, tracking, and management protocols using nothing more than a series of black and white lines on a student card or document. But encoding information is only half the battle. To effectively leverage the benefits of educational barcodes, schools need straightforward, SDK-based integrations that deliver accuracy, reliability, speed, and mobility.

Learn how your educational institution can integrate barcodes today at

www.accusoft.com

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