Clever

Rostering: The essential bridge between learning applications and student data

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In classrooms all around the U.S., educational software is transforming how students learn. Not only does software present information in new ways that fuel student enthusiasm and comprehension, it also enhances curriculum by providing personalized learning experiences. Instead of presenting all students with a single standard lesson, educational software allows content to be modified to meet individual needs, ensuring that all students learn at their own pace and can focus on critical areas of improvement. For example, if one math student needs help with multiplication and his classmate needs to spruce up on long division, personalized learning software can give each student a different, tailored lesson—helping both fully grasp important concepts before moving on to other content that builds on that knowledge.

Today, most school districts use an average of nine different online learning applications (apps) to deliver this kind of powerful personalized learning, and that number is projected to grow to 40 or 50 apps in the next few years. As educational technology expert Jordan Shapiro wrote in Forbes, "We are currently in the formative years of an edtech revolution. A complete digital overhaul of our classrooms is inevitable."

It's clear this proliferation of learning apps expands students' educational options, allows for personalized learning, and broadens teachers' effectiveness—but the technical setup and ongoing maintenance of these programs is a significant barrier to implementation. Without a rostering solution in place, much of the work is left to educators or IT admins.

Schools implementing learning apps are faced with software challenges such as:

- How is student information shared with learning applications?
- What data needs to be shared with each application—and in what format?
- When student information changes, how will the learning application be updated?
- What happens to the privacy and security of student data when it's shared outside the school network?

To manage these complexities, an increasing number of schools and districts are turning to automated rostering solutions. That way, they're not only saving precious staff time and financial resources—they're able to make the most of, and even expand, the edtech resources they offer students.

Most school districts use an average of nine apps to deliver personalized learning.

What is rostering?

Anyone who's worked in a school is likely well acquainted with rosters: lists of student and teacher information that include attributes such as name and grade. In the context of educational software, rostering is the process of communicating those rosters from school systems to learning applications that need the data to provision, or set up, their virtual classrooms.

The information required by learning apps could include who the students are, who the teachers are, what classes they're in—and any other information an application might need to get students into the correct groups, show them the right content, and track their progress as they move through the curriculum. And rostering doesn't just mean moving data from Point A to Point B: student information must be delivered to applications in a format those applications can recognize and work with— and it must be kept updated throughout the year as rosters inevitably change.

The rostering system

School → Student information system → Clever → Learning applications → Classroom learning devices
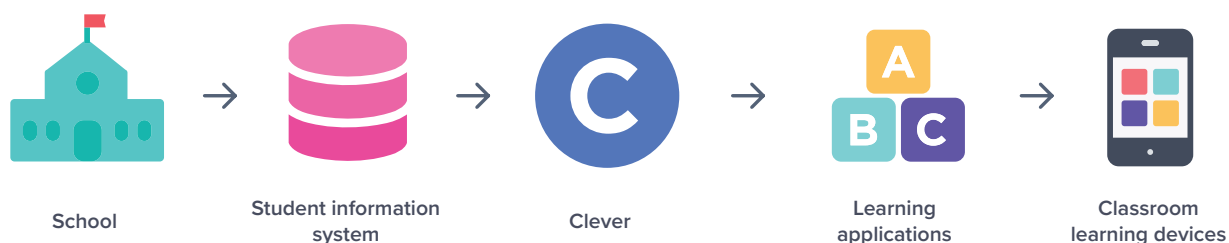
What is manual rostering?

When districts don't have an automated rostering solution in place, district and school administrators, teachers, and sometimes students and parents are left to roster manually, which often means creating student accounts one at a time by inputting information directly into their software. If they're using information that's already in the student information system (SIS), manual rostering is generally done one of two ways: either by initiating vendor-specific bulk transfers or by sending student data via CSV files. (CSV stands for "comma-separated values," a common format for storing and sharing information from databases and spreadsheets.)

However it's done, manual rostering is generally cumbersome, time-intensive, and error-prone—and that can mean considerable amounts of lost education time. For instance, many smaller districts with limited information-technology capacity find grappling with manual rostering particularly challenging. Larger school districts face rostering challenges as well—in fact, if they're using multiple learning applications, they might need a whole team of people constantly creating and uploading CSV files to keep the information in those apps up to date. Districts also have to manage mapping multiple roster fields (such as name and grade information) across many applications—each of which may handle those roster attributes differently.

Whether at a single school or a large district, manual rostering can also take a big bite out of both staff schedules and school budgets. Indeed, in a recent digital learning survey of districts and schools, more than half of respondents cited rostering as a major obstacle in deploying applications. And when staff members have to devote time to addressing rostering issues, that's time taken away from critical activities like lesson planning, as well as the core administrative tasks that keep schools functioning.

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Districts often report that the manual rostering process takes weeks, sometimes even months, which means that students are well into the semester before they can begin to use the software that has been purchased for them.

Data privacy is another concern with manual rostering. Teachers' primary focus is maximizing instructional time for their students—not setting up software. Sometimes, in the interest of getting applications set up as quickly as possible, they send spreadsheets with student information to applications via the most convenient method. While that can be the quickest way for teachers to ensure students have access to software, it runs the risk of student information being misdirected or, in the worst cases, hacked.

And just as manual rostering distracts from educators' core mission, it can do the same for edtech developers. For instance, when a school or district shares student data manually, that data may also have to be processed manually on the receiving end. That means edtech developers have to validate and clean up information so it can work with their learning software. "Our focus is on creating the best reading experience for students in the world," Dan Cogan-Drew, Chief Product Officer of [Newsela](), says. "Rostering is a piece that helps us achieve that, but it's not our core competence. That's why it makes sense to work with a partner that has made rostering the focus of its business."

Unfortunately for edtech developers and schools alike, rostering isn't something you do once and never think about again. Roster information needs to be constantly updated as students come and go, move from one homeroom to another, or simply advance to the next grade. "Unless they are data-interchange zealots—and there are very few of those—teachers simply don't have the time to invest in maintaining the roster information that edtech applications require," says Eric S. Hileman, Executive Director of IT Services with Oklahoma City Public Schools (OKCPS).

"Teachers are in the business of teaching and learning, not managing technology. If we can take that off their plate so all they have to do is teach, that's a huge win for us."

For these and other reasons, Hileman's school district is one of the many thousands that use solutions to automate the rostering process so that a single, easily managed data feed goes out to all the edtech apps OKCPS uses. That not only removes the pain caused by having to share student information, it also makes the data more dynamic, so the most current information is always available. And when it's done right, rostering solutions also keep student information secure.

Why use a rostering solution?

Rostering solutions move roster data from schools to learning applications automatically and securely, delivering student and teacher information in a format that apps can process. Rostering solutions help school districts make the most of their edtech investments—and allow both districts and edtech developers to focus on their core competencies.

Some specific benefits include:

Saving considerable time
First and foremost, a rostering solution makes the most of instructional time. With automatic rostering, students can dive right into their edtech curriculum, without wasting teacher and student time on setting up each individual account. A comprehensive rostering solution allows teachers to focus on core educational activities like lesson planning and homework review—and students to focus on learning.

For instance, Clever's Secure Sync relieves teachers and district administrators from any manual setup work, acting as the bridge between a district's student information system and its applications. Schools and districts decide what data they want to share with each edtech application they're using, by setting up the appropriate sharing permissions. Clever then maintains up-to-date roster information by securely transferring roster data from the SIS to apps. It can automatically pull the latest student and teacher information as often as every two hours. That means learning apps always have access to current data—without teachers or anyone in the school district having to devote time to manually sharing that information.

OKCPS's Hileman appreciates the way districts can leverage a single data sync to Clever to power dozens of edtech applications. "Looking at things in terms of manpower investment, there's an incredible benefit in maintaining one set of files for a multitude of uses," he says. "It's super easy— extract, upload, rinse, and repeat."

How much work can a comprehensive rostering solution save staff at schools and districts? Well, during an average day, Clever handles approximately 5 million data transfers and updates between educational institutions and the edtech apps they use. That's 5 million data setups or updates that educators and administrators don't have to take care of themselves. Patrick Mount, Director of Information Technology at St. Vrain Valley School District says, "For each application, a rostering solution such as Clever saves us up to 10 hours during the first month, and about 1-2 hours per month thereafter for addressing roster information changes."

OneRoster

OneRoster is an open standard developed by IMS Global Learning Consortium® for sharing class rosters and related data between a student information system and other applications, used across the edtech industry.

Clever is certified by the IMS Global Learning Consortium for the latest 1.1 version of the OneRoster global standard, as well the previous 1.0 version. More than 1,400 schools implement IMS OneRoster standard to automatically roster their software via Clever's Secure Sync.

🔒 Protecting the privacy and security of student data

Another core function of a strong rostering solution is keeping student information safe. Most districts transfer files via a secure file transfer protocol (SFTP) or an application programming interface (API)—two of the most secure methods of moving data. And working with a rostering solution provider relieves schools and districts from the burden of keeping up with the dizzying and ever-changing array of federal, state, and local requirements for the privacy and security of student information.

Clever's rostering solution aims to be the most secure option available to schools and districts. Clever provides controls that allow users to share only the pertinent and necessary data required by individual applications—and nothing more. That means districts can specify a specific group of students who need access (even if they're in separate schools), as well as stipulate which data associated with an individual student should be shared. For instance, if sensitive information such as a student's English-Language Learner (ELL) or Free and Reduced-price Lunch (FRL) eligibility status isn't pertinent for an application, that information isn't shared with them.

And to make sure student data is safely transmitted and stored, Clever uses strong forms of cryptography, or storing and transmitting data in a special format so that only those for whom it is intended can read and process it, with access-controlled keys that are regularly audited and updated. It also has a dedicated security team that's focused on staying up to date on security and privacy threats—as well as the regulations designed to protect student data. Clever is fully compliant with those regulations, including federal mandates like FERPA and ESSA, as well as an array of state and local requirements. Read more about Clever's data privacy practices.

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Clever's approaches to rostering automation

Rostering solutions automate the process of sharing student information with edtech applications by using either a "pull" or a "push" model:

Auto sync

An auto sync "pulls" pertinent roster data by connecting directly with a student information system. It requires minimal setup and IT support from a district. Depending on the SIS, an auto sync is either managed by the SIS itself or by a district administrator.

SFTP sync

A secure file transfer protocol (SFTP) sync allows districts to "push" data to a rostering solution. Districts generate multiple files in a specified CSV format and submit them using SFTP. The rostering solution then receives these files and handles transferring to each application, as opposed to directly sending files to each application, meaning only one set of files is needed for all the applications a school uses. Because districts control precisely what data they include in their upload files, this approach provides a greater level of customization but requires more time to setup and manage. SFTP sync works for any SIS.

[Click here](#) to delve deeper into Clever's rostering solution—including a list of student information systems and their supported sync options.

Ensuring the right data is being shared

A rostering solution ensures that student data is current, accurate, and in a format that edtech apps can use. For instance, Clever performs extensive data validation and data normalization, processes which confirm that the user and roster information is accurate and that the data structure is consistent across all districts. This ensures that the data is ready for use before an application is even enabled. A powerful rule-based

sharing engine makes sure that only select information is available to applications—and that information is dynamically updated to include any changes to users or rosters.

Clever even checks that those data changes are intentional. Any time its software detects a significant change to information files—say a school administrator accidentally deletes the files for all the students in a particular homeroom—Clever checks in with the district to make sure the change isn't an error before proceeding. That simple step can have a big impact, potentially saving a district from a disastrous situation in which thousands of records are inadvertently deleted from all applications.

Making the most of edtech portfolios

With a solid rostering solution, schools can expand their portfolio of edtech apps without expanding staff to-do lists. "We can adopt more applications without worrying about logistics," Hileman from OKCPS says. "That's especially useful in a large urban district like ours."

Considerations for edtech developers

Dan Cogan-Drew, Chief Product Officer of Newsela, offers this advice on what edtech developers should think about as they assess rostering solutions:

Know what your app needs from a rostering solution.

"Keep those particulars uppermost in your mind as you look at your options. For instance, if your app is on mobile platforms, your rostering provider needs to be where you are. And if the data coming in has been cleaned up by your rostering solution and is delivered in the format your app requires, that will smooth out a lot of potential bumps.

Finally, since up-to-date data integration is essential, look for a rostering solution that offers frequent syncing."

Pick a rostering solution that's popular with schools.
"A rostering solution needs to be widely used—if only one out of 10 schools is using it, it won't be beneficial for your app. Most schools look for products that are easy to use—even for people without tech backgrounds."

Find a partner you can count on.
"Edtech developers need a highly reliable rostering partner. If the rostering partner fails, we fail—because that failure prevents schools from using us. We also need a partner whose solution integrates with most student information systems. We want our rostering partner to pave the way, not put up roadblocks. If we're associating ourselves with a partner, their reputation affects our reputation. So we want to be associated with the best."

Do the math.
"The purpose is to save the cost of building multiple integrations with every SIS you're working with. When you're looking at how much time and effort a solution might save you, factor in any value-add it might bring as well."

Look at the company behind the rostering solution.
"You want to know you'll have excellent customer support, including a solution that's well documented and well maintained—not to mention smart and committed people to work with. You also want to feel confident that the solution will be updated as technical standards and privacy regulations evolve. That way, you can focus on your core business while someone else handles standards support and privacy requirements—both of which are moving targets."

How Clever can help

Rostering is the bedrock of Clever. Launched with the mission of making it easier for schools to use learning software, Clever's first product, Secure Sync, automates the secure transfer of continuously updated student roster information to authorized learning programs. It is engineered to be the most secure and convenient way for districts to send data to edtech vendors. In addition to Secure Sync, Clever has single sign-on solution with the Clever Portal, which grants students and teachers access to all of their learning applications with a single set of credentials, Clever Badges, which provide an easy way for younger students to log in to edtech resources, and Goals, which gives everyone at a district data and tools to turn learning software into student achievement. Hileman values Clever as his district's rostering partner. "Not only does Clever save time, it's something we can rely on," he says. "Clever has been rock solid for us. It works every time. I'd absolutely recommend Clever to other districts."

More than half of U.S. schools already use Clever to make the most of their edtech apps. If you're a school or district interested in getting started with automated rostering, there are just a few simple steps to follow to set up a Clever account. And if you're an edtech developer interested in joining the more 300 vendors partnering with Clever, you can get started here.

About Clever

Clever was founded in 2012 by educators and technologists who knew that schools, teachers, and students could all benefit from digital learning apps, but that key challenges were standing in the way. In the past five years, more than 60,000 schools in the United States have adopted Clever. As the only platform of its kind, Clever is used by software developers to integrate their applications with student information systems, reducing the cost and time involved in the traditional integration process.

For more information about Clever, please contact info@clever.com. To find out how to integrate Clever into your application, please contact sales@clever.com.

District checklist for a quality rostering solution

☐ **Direct SIS integrations.** Look for a solution that gets data directly from your school or district's student information system—your data's "source of truth" —no matter which SIS you use.

☐ **Data normalization.** A robust rostering solution will standardize your data and remove duplicates so edtech apps can work with that information as soon as they have access to it.

☐ **Data quality improvements.** Your solution should be able to scan for inconsistencies and mistakes that often creep in during data entry, then implement fixes to ensure data is accurate and legible for your edtech apps.

☐ **Automated holds for large data changes.** A rostering solution should process data changes on a frequent basis, but should also include logic to detect significant data changes that could be accidental. This provides a check so an error in the data sync doesn't overwrite existing information without confirmation that the large change is intentional.

☐ **Granular data sharing.** Whether it's a student record or individual data fields on a student profile, this option enables schools to control exactly how and what data is shared, so apps only see the data they need for smooth operations and nothing more.

☐ **OneRoster compliance.** Ideally, the rostering solution provider will allow districts to implement the IMS OneRoster standard to automatically roster their software.

☐ **Best in-class support.** Look for a rostering partner with a track record of providing effective, responsive, and tailored technical and product support.