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Using Data to Create a Learning Dashboard for Teachers

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At Khan Lab School (KLS), we are a non-profit, mastery-based K-12 independent school that aims to share our research findings with the broader education community. Founded in 2014 by Salman Khan (also founder of Khan Academy) and based on the vision outlined in his book, *The One World Schoolhouse*, KLS reimagines education with a mixed-age, personalized learning model that prioritizes student agency, social-emotional learning, and executive skills formation. **To make time and space for deep understanding of academic content, our students do not receive letter grades or a traditional GPA as markers of their progress.** Instead, KLS focuses on student mastery and gives each student time and opportunity to learn at their own pace (based upon a minimum pace) with support from teachers.

KLS combines collaborative class time with independent goal time where students use analog resources and digital e-learning platforms to practice and advance their skills in Math, English/Language Arts (ELA), Computer Science, and more. **Independent learning is critical at KLS — students set their own weekly learning goals to map out their assigned work with the support of their Advisor, and they meet weekly with their Advisor to check on the completion of those goals.** To prepare for those regular check-ins, teachers need to gather data from all the digital learning tools used by students.

Our use of digital e-learning platforms, including Khan Academy, meant that students were sometimes using more than four different apps on a daily basis to complete their academic assignments. This approach necessitates new methods for teachers to monitor and track student learning and progress. To gather progress data for each student, our teachers and Advisors needed to look at multiple e-tools they use for their courses, which became time-consuming and challenging to track in real time. **In an effort to save teachers valuable time gathering this data from multiple sources, KLS teachers partnered with one of our parents (Dana Kravchick) to develop a solution that can be replicated in other school models.** Over the past year, they developed a dashboard tool that accomplishes this.

Before the dashboard, KLS teachers spent, on average, 20 minutes every day on data collection and analysis.

For example, a student in a Math class may need to complete a digital lesson on one application, complete another assignment designed by the teacher, and submit to a learning management system, as well as finish an assessment quiz on a third platform. **For the Math teacher, this means logging in to three different platforms to collect the data for each student and recording it all in one place.** Doing this for 20+ students is a time-consuming task, taking time away from assessing written student assignments. **Teachers were also using various spreadsheet formats, which led to data privacy concerns.** With remote learning and the increased usage of digital learning platforms, these problems became well-known to teachers everywhere, yet to date, there is no real widespread solution. (For more information, see these resources from the Bill and Melinda Gates Foundation and Project Unicorn.)

The Wavio dashboard pulls data from across our digital learning platforms, taking the burden of gathering data off the shoulders of teachers. Data from all different platforms is pulled together into one database, which is then integrated and visualized in a student dashboard. Teachers then access the dashboard, select their classroom, student name, and dates of interest to see all work accomplished by that student for the given dates (**Image 1: Weekly Assignments**).

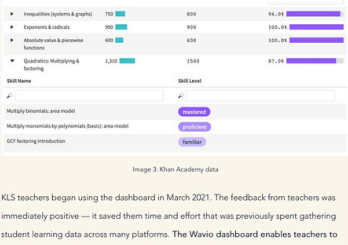
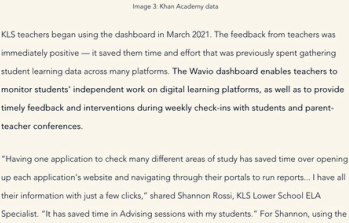


Image 1: Weekly Assignments

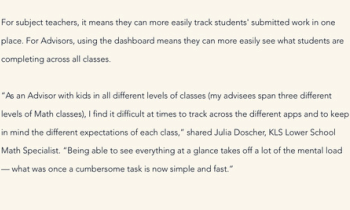
For classes like Math and ELA where students use multiple digital systems, a unique integration of those selected resources can be generated to provide a full spectrum of the student work accomplished (**Image 2: Zearn/Canvas Integration**).


Zearn Lessons and Exit tickets

Course Name	Zearn Lesson	Lesson	Exit Ticket	Grade	Previews
Math 3	G3 M5 L26	✔Yes	✔Yes	incomplete	
Math 3	G3 M5 L27	✔Yes	✔Yes	complete	
Math 3	G3 M5 L28	✔Yes	✔Yes	complete	
Math 3	G3 M5 L29	✔Yes	✔Yes	complete	

Image 2: Zearn/Canvas Integration

For some platforms, such as Khan Academy, the Wavio dashboard provides a student-centered view that includes module completion with insight into skills mastery for each module (**Image 3: Khan Academy data**). This view is currently not available through the Khan Academy platform itself, and adding this feature helped KLS teachers to transition almost entirely to using the Khan Academy system for teaching Math.


Module Name	Points Earned	Points Total	Mastery percentage
Inequalities (systems & graphs)	750	800	94.0%
Exponents & radicals	900	900	100.0%
Absolute value & piecewise functions	600	600	100.0%
Quadratics: Multiplying & factoring	1,350	1500	87.0%

Skill Name	Skill Level
Multiply binomials: area model	mastered
Multiply monomials by polynomials (basic): area model	proficient
GCF factoring introduction	familiar

Image 3: Khan Academy data

KLS teachers began using the dashboard in March 2021. The feedback from teachers was immediately positive — it saved them time and effort that was previously spent gathering student learning data across many platforms. **The Wavio dashboard enables teachers to monitor students' independent work on digital learning platforms, as well as to provide timely feedback and interventions during weekly check-ins with students and parent-teacher conferences.**

"Having one application to check many different areas of study has saved time over opening up each application's website and navigating through their portals to run reports... I have all their information with just a few clicks," shared Shannon Rossi, KLS Lower School ELA Specialist. "It has saved time in Advising sessions with my students." For Shannon, using the dashboard tool has saved her over an hour per week, allowing for more time to conference with students about their goals.

For subject teachers, it means they can more easily track students' submitted work in one place. For Advisors, using the dashboard means they can more easily see what students are completing across all classes.

"As an Advisor with kids in all different levels of classes (my advisees span three different levels of Math classes), I find it difficult at times to track across the different apps and to keep in mind the different expectations of each class," shared Julia Doscher, KLS Lower School Math Specialist. "Being able to see everything at a glance takes off a lot of the mental load — what was once a cumbersome task is now simple and fast."