

# In Praise of Paper and Pencil

**Five Reasons Going Old School Will Earn an A+  
(And How to Make It Easier for Educators)**



**Over the past several decades, the advent of new technologies has transformed the educational landscape. Educational technology, or “edtech,” is now an integral part of the modern classroom. Advances in educational technology continue to impact the classroom in innovative ways from the personal computer to the Internet to generative artificial intelligence (AI).**

With the enthusiastic embrace of digital tools, however, educators might be overlooking the power of paper-based assignments — especially for purposes such as benchmarks and common formative assessments.

While educators have become comfortable with technology and embrace its countless benefits, it’s still important to recognize the

utility of pencil and paper, says Kristin Van Gompel, Ed.D., a former classroom educator who now manages the Teaching and Learning Innovations team at edtech provider Turnitin. “Even though I’m an edtech and eLearning enthusiast, I still found paper to be useful for so many things, from an in-the-moment complex diagram to a quick spot check to gauge my class’ mastery of a concept.”

Paper obviously has some drawbacks, namely the cumbersome nature of sifting through stacks of it to grade and provide feedback. Fortunately, there’s a solution that allows you to simultaneously embrace the instructional advantages of paper and lighten the grading workload that comes with the choice. Read on to explore five reasons to reconsider your relationship with paper and how you can make grading those assignments fast and easy.



## Five Benefits of Paper

Educators whose district has largely eliminated paper in instruction may be missing out on some of the advantages both students and teachers can capitalize on with thoughtful integration of paper assignments.



### **Benefit 1: Paper is equitable.**

Paper requires neither an Internet connection nor electricity for students to use it. All they need is a pen or pencil. Paper-based assignments allow educators to cater to the varying needs of their learners, which makes assignments more inclusive.

With paper, students can do their schoolwork whenever they have the opportunity — such as on public transportation or while on break at a job — without having to rely on computer access. Because it's portable, they can work together with family members or friends, making it easy to complete the assignment wherever they are and in whatever pockets of time they can identify.

It also helps alleviate the troublesome nature of the “digital divide,” as studies find that nearly one-quarter of low-income households with children lack access to the internet. “It’s critical that each student has the same tools to complete their work, which isn’t always the case, especially in areas where Internet access may be an issue,” says Van Gompel. “A student may have to go to the library to complete a tech-based assignment, or they may not be able to complete it at all. This is why it’s important for teachers to design their assignments specifically for their student population — choosing what can be completed inside or outside of the classroom.”



## **Benefit 2: Teachers get to focus on the teaching, not only the tech-ing.**

Because of tight budgets, many schools have limited access to IT staff, which can frequently put educators in troubleshooting mode — whether it’s dealing with passwords that need a reset, glitchy WiFi, forgotten power cords or dead batteries. Tech management can be a whole job in itself, Van Gompel acknowledges. She further advocates for teachers to receive more support and training to handle tech in the classroom.

For important tools like formative assessments, asking teachers to simply distribute and collect paper streamlines the process by freeing up the time that students would otherwise spend getting logged in.





### Benefit 3: “Show your work” works.

Handwritten assignments are often the most straightforward way for students to demonstrate competency by incorporating proofs, diagrams, maps, flowcharts and countless other useful types of tasks and questions. Looking across the curriculum, it’s more straightforward to write musical notes, words in world languages with different alphabets, and chemistry symbols with pen and paper.

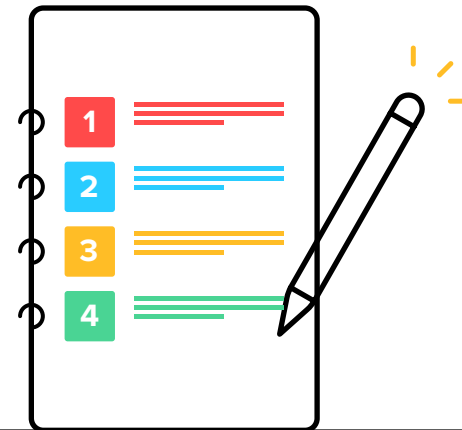
When you step back to consider what it really means to assess, it’s about having students demonstrate their understanding of a concept — which you can better determine when they show their thought process — rather than just a final answer. “Paper and pencil really allows students to explain, describe and show what they know,” points out Katy Dumelle, Product Manager at Turnitin. “That allows the teacher to identify gaps more easily so they can intervene and offer timely, effective feedback.”

In addition, paper is the ideal medium to foster collaboration, which is an essential 21st century skill, says Van Gompel.

**“Learning happens as students are brainstorming or planning. Being in person, using something like paper to collect ideas allows students to easily collaborate.”**

**Kristin Van Gompel, Ed.D.**

Former Classroom Educator, Manager at Turnitin





#### **Benefit 4: Paper is fast and flexible— and offers more control.**

Effective assessments are key for student growth, and paper affords the flexibility for teachers to design instruments the way they want, says Dumelle. “There are no limits. Students can draw, label, circle, explain, show steps or write out responses — whatever works for the individual class and the learning objective they’re trying to assess.”

During in-person classroom instruction, paper-based assignments allow educators to meet students where they are at that moment. “Adapting based on the needs of their students can be really empowering,” Van Gompel says.

**“Each school and classroom has unique needs, which is why it’s important for educators to have freedom in how they design assignments and assessments for students.”**

**Kristin Van Gompel, Ed.D.**

Former Classroom Educator, Manager at Turnitin



## **Benefit 5: Writing things down helps with mental cognition.**

Physically writing activates students' brain and builds the neural connections in their brain, which can increase memory retrieval. In addition, many educators have also anecdotally noticed that the tangible nature of writing things down helps a learner organize their thoughts.

Van Gompel points to Jean Piaget's constructivist learning theory: that learning is most effective when students are actively constructing their own knowledge. Citing Seymour Papert, she elaborates, "Students are drawing conclusions by making an artifact, which in this case is writing."





## Tapping Tech to Effortlessly Grade Papers with Ease

Despite these myriad benefits, paper does have its challenges once the work is handed in. That's why even though educators might embrace the value of paper in theory, they're often stymied by the effort involved in evaluating, grading and offering impactful feedback and analysis.

Grading and feedback are where digital technologies can provide an advantage. The structure and scalability of well-built software makes it easier to manage large amounts of information. Fortunately, there's now a way to marry the instructional advantages of paper with the efficiency of grading electronically — and it's available through a service your institution may already have. Turnitin Feedback Studio is used and trusted in thousands of school districts across the United States for online grading and now offers a new workflow that allows educators to smoothly blend the benefits of paper assignments and assessments with the benefits of digital tools.

**This innovative solution represents the best of both worlds, seamlessly handling the key pain points educators face with paper assignments.**



## **Pain point 1: Piles of paper are cumbersome**

Dumelle calls it the “elephant in the room:” the inconvenience of lugging papers around. But Turnitin takes over as soon as the assignment is completed and turned in. After you run the entire stack through a scanner all at once, the paper shuffle is over – from there, student work can be graded and returned digitally. “When you compare manually grading and leaving feedback on 300 students’ assessments versus scanning a batch, uploading them into Turnitin Feedback Studio and then applying consistent feedback, it can literally save hours of work for a teacher while delivering better results,” says Van Gompel.

**"Students get the benefits of learning with paper without teachers having to spend all of the time it usually takes to grade paper-based assignments."**

**Kristin Van Gompel, Ed.D.**

Former Classroom Educator, Manager at Turnitin





## **Pain point 2: It is difficult to grade an entire stack equitably**

When working through that pile of papers, maintaining fairness between the student whose work is at the top of the stack and the one stuck at the bottom is a challenge for even the most diligent and experienced of educators. Turnitin Feedback Studio allows teachers to grade all of one question at a time, with the support of automatic answer grouping for sets of identical answers to a given question. That means they only need to grade each unique answer one time and the feedback will be applied to all. While paper is equitable when students are completing assignments on it, challenges emerge when teachers have to grade what students have handed in.

What happens when partway through grading, you realize that you need to change your scoring for a certain question or tweak the feedback you want to share for everyone who gave a certain response?

That's where Turnitin Feedback Studio shines, through an innovation that Dumelle terms the "secret sauce to the workflow." With its dynamic scoring guide, you can make decisions on the fly for scoring that's more accurate and equitable with updates applied retroactively to items that were previously graded.



### **Pain point 3: Vital student performance data is inaccessible when it's in ink**

When working with paper-based assignments without technological support, extracting data requires laborious effort. Turnitin Feedback Studio, on the other hand, allows educators to more easily see trends in student performance for paper-based assignments. "It spotlights where the class needs additional instruction or can help identify a question that didn't elicit what you were intending," Dumelle says. "It allows you to make decisions on what you're going to teach tomorrow based on what you discovered in their assessment today."

**"The rich data becomes a record of work for each student and allows educational leaders to identify gaps or changes over time."**

**Kristin Van Gompel, Ed.D.**

Former Classroom Educator, Manager at Turnitin





## Pain point 4: Feedback challenges

By eliminating unnecessary time consumers such as double-checking answers and grouping questions, teachers can apply more focus to the feedback they leave for students, such as by using the grouping function where similar answers are graded together. “The 25 students who had the same error can immediately receive the same feedback, without the teacher repeatedly writing the same comment,” says Van Gompel.

That allows them to provide more customized feedback, which is critical to student learning and better outcomes. “Research supports that feedback can improve students’ confidence, self-awareness and enthusiasm for learning,” she says, citing a recent study by Dr. John Hattie, which she and other members of the Turnitin Team co-authored, showing how more concrete “Where to next?” feedback has the strongest impact on student growth.

**"This program makes it easier for teachers to provide consistent feedback for every student."**

**Kristin Van Gompel, Ed.D.**

Former Classroom Educator, Manager at Turnitin

# Turnitin Feedback Studio at Work

## The Use Case

A district provides the same assessment for all students in 10th grade geometry - across all teachers and all high school campuses, allowing them to compare among a variety of variables. The paper-based assessment allows students to draw angles, label parts and show their work.

## Putting the Turnitin Feedback Studio Process to Work

After the assessments are complete, the papers are bulk scanned and uploaded to Feedback Studio. The papers are then matched to the student roster using handwriting recognition technology. The entire teaching team can then divide and conquer the grading, allowing them to develop a robust scoring guide for their discrete part.

As grading commences on items where students need to draw shapes and pictures, the educator will first quickly sort all responses into groups. The educator will then score and provide feedback on each unique response once, and only once. Not having to grade identical accurate drawings of a dodecahedron over and over again improves time spent by an impressive multiple.

$$\begin{aligned} 86a.) (4a+1)(a+2) - (a+2)(4a-1) &= \\ 4a^2 + 8a + a + 2 - (4a^2 - a + 8a - 2) &= \\ 4a^2 + 8a + a + 2 - 4a^2 + a - 8a + 2 &= \\ 2a + 4 & \end{aligned}$$

$$\begin{aligned} d.) (4a+5)^2 - (8a+3)(2a-5) &= \\ 16a^2 + 40a + 25 - (16a^2 - 40a + 6a - 15) &= \\ 16a^2 + 40a + 25 - 16a^2 + 40a - 6a + 15 &= \\ 74a + 40 & \end{aligned}$$

$$\begin{aligned} 87a.) (2a+3b)(a-2b) - (a+2b)(2a-b) &= \\ 2a^2 - 4ab + 3ab - 6b^2 - (2a^2 - ab + 4ab - 2b^2) &= \\ 2a^2 - 4ab + 3ab - 6b^2 - 2a^2 + ab - 4ab + 2b^2 &= \\ -4ab - 4b^2 & \end{aligned}$$

### TOTAL POINTS

2.0/3.0 pts

86

+1.0  
Correct

87

+1.0  
Correct

88

-1.0  
Incorrect

Where the time savings from Feedback Studio becomes exponential, though, is on items where students label the shape, describe any interior angles, write the formulas for the shape's perimeter and area, and show their steps as they calculate the perimeter and area to three decimal places. In this case, Feedback Studio will consider the thousands of student responses to a question seeking the formula for the area of a circle and then automatically group unique answers for the educator. The educator will then confirm the answers, give all correct responses of  $\pi r^2$  full points, and give feedback to all those who responded  $2\pi r$  that what they wrote is the formula for the circumference of a circle rather than its area.

**"This allows us to leverage artificial intelligence where it's most practical. We let AI do the work of sorting answers into groups and then have the teacher come in to review the groups and leave the robust feedback that facilitates learning. It's all about maximizing teachers' valuable time."**

**Katy Dumelle**  
Product Manager, Turnitin

After all the assessments are graded, teachers can return the work to their students with a click of a button, which Dumelle notes is another time saver. "They are able to see their grades and close the feedback loop without delay."

It's all done in a privacy-first way, she points out. "Turnitin handles sensitive information on a daily basis, and our job is to keep it safe," she says. "We are experts in storing data in a way that meets all of the standards for our customers across the globe. With this piece of added technology, we are adhering to all of the privacy policies that we have in place today, and we'll continue to keep those updated as new technology emerges."



## Enlisting the Dream Team: While Paper is Powerful, Tech Makes it Better

While educators sometimes dread deploying paper-based assignments because of the hassle factor, this new functionality can dramatically reduce the burden of grading. “While educators have always known that more frequent paper-based assessments are a valuable tool, the hurdles seemed insurmountable. The new streamlined process from Turnitin finally makes it feasible,” Dumelle says.

Do you want to know more about Turnitin solutions that would be beneficial in your district? Schedule a consultation with a Turnitin specialist today.

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