



AI-Assisted Video Evaluation in a High School Cosmetology Career Technology Education (CTE) Class

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The purpose of the Center for the School of the Future is to promote empirically validated practices in public education systems and to encourage cooperative and research relationships between K-12 and higher education institutions.

Overview

In Utah's Canyons School District's cosmetology CTE (Career and Technical Education) class, a teacher used AI to evaluate student performance videos against a rubric, cutting feedback turnaround from one week to one day and increasing feedback consistency for every student. AI-assisted feedback processes resulted in specific, actionable comments that each student could immediately use to improve their cosmetology-related performance. The results were not just faster but also made for a more efficient workflow for the teacher. Changing the feedback process resulted in a measurably better learning process for students because rubric-oriented, student-specific feedback came quickly and in the early stages of learning.

The Problem: Feedback Gap and Feedback Consistency

In CTE cosmetology courses, students record two- to three-minute performance videos demonstrating hands-on skills such as hair cutting, styling, coloring, and chemical treatments. Evaluating each video against a detailed performance rubric is extremely time-consuming. With 80 students, instructor Eliza Seeley needed nearly a full week to watch every student's demonstration, score them, and write individualized comments. By the time students received feedback, the class had already moved on to the next skill, so the feedback was not directly tied to improving the skill students were focused on. The feedback

bottleneck was not just an inconvenience for the teacher; it directly limited how much students learned from each assessment. When feedback is not immediate and specific, it is not as impactful (Hattie & Timperley, 2007).

The Solution: AI as a Rubric-Aligned Evaluation Assistant

Seeley worked with staff from USU's Center for the School of the Future to co-develop a custom Gemini AI evaluation tool. First, she uploaded her detailed cosmetology performance rubric into the AI tool. Next, she configured the evaluation criteria within the AI tool and helped draft the instructions for the AI to follow when generating the output. She also established a clear video setup for students, including recording standards for lighting, camera angle, and audio.

The AI evaluation platform included the following capabilities:

- **Video Import and Processing:** The AI tool accepted student-recorded performance videos and analyzed demonstrated cosmetology techniques frame by frame.
- **Rubric-Aligned Analysis:** The AI tool scored each video against exact criteria in the teacher's rubric, producing consistent and objective draft assessments.
- **Automated Comment Generation:** For rubric items where a student fell short, the AI wrote targeted comments, naming the specific moment in the video and describing the needed improvement.
- **Teacher Oversight:** The AI output was only a first draft. Seeley reviewed every score and comment and made the final grading decision.



Impact on Student Learning

The clearest gains in this pilot were what students were able to do with the feedback they received. Three things changed for learners:

1. Feedback Arrived While the Students Were Still Learning

Because turnaround dropped from a week to a day, students could immediately apply their feedback the next time they picked up shears or mixed colors. Corrections landed in the same learning cycle as the mistake, which is when motor-skill learning is most effective (Schmidt & Lee, 2011). Students reported that they remembered exactly what they had been trying to do in the video, so the feedback attached to specific behaviors, rather than to abstract concepts of practice.

2. Students Knew Exactly What to Fix

Instead of general remarks like “watch your sectioning,” students received comments tied to behaviors from specific moments in their own video and to specific rubric items, for example, the angle of the shears at a particular cut or a missed step in a chemical service sequence. Concrete feedback gave students a clear next action, which is associated with stronger skill acquisition and application in performance-based learning (Shute, 2008; Wisniewski et al., 2020).

3. Every Student Was Met Where They Were

The AI naturally differentiated feedback by skill level. Students displaying advanced skills

received confirmations of correct techniques and suggestions for further technique enhancement. Students displaying foundation skills received more detailed corrective feedback on foundational errors and missed steps. Both skilled and beginning groups received deep feedback useful to their individual growth, without requiring extra teacher time. Surveys revealed that both students and parents perceived the assessment process to be fairer and more transparent than the previous evaluation process because every video was measured against the same standard in the same way, and importantly, focused on behaviors that demonstrated competency.

Impact on the Teacher

Seeley’s evaluation turnaround time dropped from nearly a full week to approximately one day per assignment. That recovered time went directly back into instruction and one-on-one coaching on the salon floor. She remained fully responsible, reviewing every AI-generated evaluation, adjusting scores as needed, adjusting written feedback, and making final grading decisions. The AI did not replace her expertise in cosmetology or her professional judgment about student competency. It supported and improved her feedback process, increasing and enhancing her instruction. Seeley noted:

“The AI imported my rubric and evaluated each student’s video against every criterion. It saved me hours of work each week and let me return feedback the next day instead of the next week.”



The comments the AI generated for incorrect technique were surprisingly detailed. It identified specific moments in the video where the student deviated from proper technique, which made my review process much faster.

I still review every evaluation before it goes back to students, but the AI gives me a strong starting point that I only need to fine-tune. It's like having a teaching assistant who never gets tired."

Challenges and Friction Points

Video Quality

Poor lighting, unfavorable camera angles, or weak audio sometimes made it difficult for the AI tool to assess certain techniques. Clear recording guidance for students was essential for fair and accurate evaluation, and though this need was addressed, Seeley plans to provide future guidance to improve video quality.

AI Misreads

The AI tool flagged the correct technique as incorrect approximately ten percent of the time, particularly for advanced or creative variations of standard procedures. The teacher reviewed and corrected these errors before the feedback reached the students. Then she edited the AI instructions to include an enhanced description of the correct technique to reduce future incorrect markings.

Student and Family Concerns

A few students initially worried about being graded by an AI. One noted, "I want my teacher to see what I did, not just a computer." Seeley was pleased to learn that the students valued her perceptions of their work, and she explained the AI-enhanced feedback process and rationale. Once students understood that Seeley reviewed and finalized every evaluation and that AI comments were only a starting point, most concerns were alleviated. Clear communication about the teacher's role in the final assessment was essential to building trust. The family-facing assurances Seeley provided further alleviated parent concerns:

- Student performance videos are processed securely and are not stored permanently or shared beyond the evaluation platform.
- AI evaluation is a preliminary tool only; the teacher reviews every evaluation and makes all final grading decisions.
- AI does not replace teacher instruction or mentorship in developing cosmetology skills. It assists only with the evaluation of recorded performances.

Teacher Trust

Seeley's CTE peers were initially skeptical that AI could evaluate hands-on cosmetology skills through video. Seeing the detailed, rubric-aligned output generated confidence.



Recommendations

Scaling and Policy Alignment

Although this pilot occurred in a single cosmetology class, the core approach of uploading a rubric, importing student performance videos, and generating AI-assisted evaluations is adaptable across CTE programs that rely on performance-based video assessment, including culinary arts, welding, automotive technology, and health sciences. Schools should establish guidelines for AI-assisted evaluation to maintain teacher oversight for final grades and feedback. AI-assisted evaluation remains subject to existing assessment integrity and grading policies.

Recommendations for Education Leaders

- **Adopt AI-assisted evaluation gradually:** Pilot AI-assisted evaluation in one CTE course before scaling to others, allowing time to refine workflows and build teacher confidence.
- **Invest in video recording standards:** Give students clear guidelines for lighting, camera angles, and audio so that AI tools can analyze performance accurately. Use early videos to form additional guidance to improve video submission quality.
- **Maintain teacher authority:** Policies should clearly state that AI-enhanced evaluations are preliminary. Teachers make all final assessments and grading decisions.

- **Provide professional development:** Train CTE teachers to upload rubrics, configure AI evaluation tools, and review AI-generated feedback effectively.
- **Measure student learning, not just teacher time:** Track whether faster, more specific feedback improves student performance on the next attempt. That is the real return on investment.

Why This Matters Now

AI-powered video evaluation does not replace the expert eye of a CTE teacher, but it removes the assessment bottleneck that prevents timely, specific feedback from reaching students when they can most effectively act on it. A rubric-aligned AI evaluation assistant accelerates feedback delivery, ensures consistent application of performance standards, and frees teachers to focus on instruction and mentorship. For CTE programs where hands-on performance is the ultimate measure of competency, AI-enhanced feedback tools keep the teacher at the center while giving students fast, concrete, individualized feedback that moves learning forward.



References

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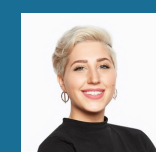
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