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# K12 SPOTLIGHT: GEARING UP FOR ASSESSMENTS

Integrating Technology for Learner Success





As educators settle into the school year, they are eager to understand where students are and how to best support them. Assessments are one of the many tools that can help. They serve several purposes and largely fall into three categories:

- Diagnostic
- Formative
- Summative

In this eBook, get a better understanding of **how technology can augment existing ways to assess learning and mastery from the learner.**

The information provided also applies to students who may be learning in alternative environments other than a classroom setting. In all cases, assessments are meant to be unbiased indicators of a student's academic abilities. Though there are biases that can impact any type of assessment, one of the major biases to address is cognitive fatigue.

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## WHAT IS COGNITIVE FATIGUE?

It is an increasingly common phenomenon where overloaded cognitive engagement results in lower performance, motivation, and information processing, especially in students<sup>1</sup>. Some studies point to the particularly challenging impact of cognitive fatigue on younger students in elementary and junior high school—from slowing motor skills to decreases in attention<sup>2</sup>.

Many teachers and schools opt to assess students at the beginning of the day to ensure this bias does not impact performance. There are many more factors that schools and educators can consider to reduce the risk of cognitive fatigue in students.

*“Distracting noise accounted for **10 points of difference** on students’ scores on a math test.”<sup>3</sup>*



## FOCUS ON FOCUS

Reducing the amount of other information that a student needs to process will help them focus on the assessment at hand.

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### AUDIO DISTRACTIONS

Keeping a classroom quiet can be difficult, especially when students finish tests at different times. One study found that distracting noise accounted for 10 points of difference on students’ scores on a math test<sup>3</sup>.

TIP: Creating separate areas in the classroom for students to take tests can help create quiet spaces. On-ear or over-the-ear headsets can remove distractions in the background, even if they are optional for the actual assessment.

### VISUAL OVERLOAD

Staring at information on a screen for long periods of time can be extremely taxing on the brain. Reducing proximity to the screen can lower eye strain and enable more comfortable sitting postures.

TIP: Consider creating assessment stations with external keyboards and mice and/or enabling students to choose support devices like these for their assessment.

### LACK OF PHYSICAL MOVEMENT

While seemingly contradictory, sitting in one position for a test can increase fatigue and challenge student performance. Enabling use of mobile devices like tablets and flexible seating allow students to choose more comfortable positions throughout their assessment.

TIP: When using iPad devices, attached keyboards will ensure the devices are equitable and fully equipped to handle any type of assessment.

## DIAGNOSTIC ASSESSMENTS

Coming out of a year of remote learning, many districts are eager to better understand where their students are and what gaps they may need to fill—especially in reading. Common digital diagnostic assessments include iReady, NWEA MAP and Renaissance Star. Because these tests are designed to classify student needs, they require a high degree of reliability, validity and fairness. Addressing cognitive fatigue is especially important so that students' results can be accurately interpreted. These three tests allow the use of external mice and keyboards and either recommend or highly recommend headphones, especially for early learners.

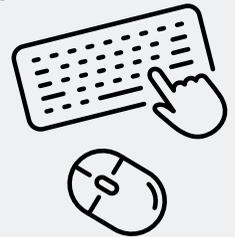
### Diagnostic Assessment Tools from Logitech:

- Rugged Combo 3 Keyboard Case for iPad (trackpad option available)
- H111 for Education Headset
- MK120 Corded Keyboard and Mouse Combo

# 70%

*“Over 70% of state testing agencies in the US **highly recommend or require** external keyboards for assessments on iPad devices.”*

Source: Logitech 2020 interviews with state testing agencies.



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## FORMATIVE ASSESSMENTS

Formative assessments are an educator's best friend. When done consistently and with the right focus, they provide a quick way to get regular feedback to both the student and educator. This is also the one area where educators can be more creative in assessing student learning and apply real-world processes in the classroom. **Multiple choice tests do not exist in the real world.** People have to formulate their thoughts and write, orally present, or show their understanding. Formative assessments can bring that real-world practice into the classroom.

A critical factor in formative assessment success is ensuring that students own the process and tracking. Allowing multiple options for students to show learning can increase student ownership in the process and make assessments more accessible and inclusive. **When students own the process, they are also more reflective and engaged in the content<sup>4</sup>.** In content creation, a best practice is to limit recording or screencasting time to 2 minutes or less. This will ensure students focus on showing their learning from the most recent lesson and objective.

**1 EMBED CHECKS FOR UNDERSTANDING WITHIN THE LESSON.** Instead of waiting until the end of class or week to assess learning, there are a multitude of digital tools to integrate checks within instruction. Nearpod, an interactive presentation builder, or Edpuzzle, a video-based lesson tool, lets you embed questions within your lesson. Students can use their tablets or notebooks to type or write in their answers.

**2 ENABLE SCREENCASTS SO THAT STUDENTS CAN RECORD WHAT THEY ARE DOING ON THE COMPUTER.** Explain Everything is a unique tool where students can record working on their device while also narrating their thinking. Using an iPad or Chromebook with a digital writing tool let's students become the teacher and walk through their thought processes step by step. Using external mics or a headset can ensure students are heard clearly and can focus on their explanation.

**3 USE VIDEO AND AUDIO TO ENABLE STUDENTS TO EXPLAIN THEIR THINKING.** Animoto or Audio Note are tools that can be used to let students create rich videos & audio recordings of their thinking. Students build skills that extend beyond showing their understanding, they learn to create concise oral presentations—focusing on what is important and leaving out what is not. One teacher set up a small studio and uses Flipgrid to let students record 20-second responses to key prompts instead of written quizzes.

**4 GIVE STUDENTS DIGITAL TABLETS AND WRITING TOOLS TO DRAW THEIR ANALYSIS.** Drawing assessments are a great way to assess mastery without penalizing students who may struggle with writing or oral communication. Students can use shapes and colors to represent relationships between different concepts.

Gone are the days of manila folders with half bent papers that students lug home. Today, digital tools can help students organize a portfolio of work and track their progress in real-time. Seesaw, Project Foundry and even Google Drive can help students manage and organize their content. Digital portfolios also help them reflect on their performance and assess where they need additional support.

### Formative Assessment Tools from Logitech:

- Rugged Combo 3 Keyboard Case for iPad (trackpad option available)
- Logitech Crayon Stylus for iPad
- H111 for Education Headset
- H390 USB Computer Headset
- C270 HD Webcam
- Blue Snowball Ice Mic



## SUMMATIVE ASSESSMENTS

Educators conduct summative assessments at the end of lesson units to provide evidence that a student has met the learning objective. For educators, summative assessments at the end of units can be a rich opportunity for creativity and critical thinking.

Consider incorporating project-based assessments. These assessments enable students to showcase their mastery through creation. Students have an opportunity to apply their learning and conduct in-depth exploration. Not to mention, this type of assessment has higher student motivation than typical tests<sup>5</sup>. Whether using a podcast project, video-based or other creative exercise, ensure students are equipped with tools to record or document their project for future reflection. **When creating rubrics for summative assessments, include elements to ensure students are actively engaging in the technology—including gaining familiarity with settings and features.**

State summative assessments are typically performed in the spring to assess students by grade and content area. First, let's review the requirements for test day. If the classroom or school has iPad devices, they can be used for state assessments. iPad devices will require external keyboards that are either integrated into the case or are wired. Chromebooks and PCs can often be used with wired external keyboards and mice. It is recommended that students are informed not to use any shortcut buttons.

Headphones or headsets are required to be provided for the audio portions of English Language Arts and Literacy portions of assessments. In many assessments, students may need to record their verbal answers and a headset with a mic is highly recommended to prevent recording external noise. Outside of this requirement, headsets also help focus students by removing external distractions. One study found that students need the sound they are focusing on to be **300% louder than other sounds or they may lose part of the learning**<sup>6</sup>. For students who require accommodations, speech-to-text features of assessments also require headphones/headsets.

### Summative Assessment Tools from Logitech:

- Rugged Combo 3 Keyboard Case for iPad (trackpad option available)
- Wired Keyboard for iPad
- H111 for Education Headset
- H390 USB Headset
- MK120 Corded Keyboard and Mouse Combo
- K120 Standard USB Keyboard
- B100 Optical USB Mouse

### Project-based Assessments Tools from Logitech:

- C270 HD Webcam
- Blue Snowball Ice Mic

# 300%

*"One study found that students need the sound they are focusing on to be **300% louder than other sounds** or they may lose part of the learning."<sup>6</sup>*



## REFERENCES

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- <sup>2</sup>Mizuno K, Tanaka M, Fukuda S, Imai-Matsumura K, Watanabe Y. *Relationship between cognitive functions and prevalence of fatigue in elementary and junior high school students*. Brain Dev. 2011 Jun;33(6):470-9. doi: 10.1016/j.braindev.2010.08.012. Epub 2010 Sep 16. PMID: 20846803.
- <sup>3</sup>Zhang B, Navejar R. *Effects of ambient noise on the measurement of mathematics achievement for urban high school students*. Urban Education. 2018;53(10):1195-1209. doi:10.1177/0042085915613555
- <sup>4</sup>Koeman, Kevin, *Student ownership, engagement, and the love of learning: investigating the correlation of student ownership to student engagement* (2018). [https://digitalcollections.dordt.edu/med\\_theses/125](https://digitalcollections.dordt.edu/med_theses/125)
- <sup>5</sup>[https://my.pblworks.org/resource/blog/gold\\_standard\\_pbl\\_student\\_voice\\_choice](https://my.pblworks.org/resource/blog/gold_standard_pbl_student_voice_choice)
- <sup>6</sup>Moore, R. E., Ph.D. (n.d.). *A comparison of acceptable noise levels in children and adults [PPT]*. Mobile: University of South Alabama