



Using Formative and Summative Assessments

in K-8 Classrooms

Assessment is more than testing students and reporting grades! The purpose of assessment is to provide evidence of student learning. Teachers and schools share accountability for instructional outcomes and are responsible for making sure these are clearly outlined and measured. Within the North American Division (NAD), the core curriculum of Adventist education, K-12, focuses on four stages. These stages are defined by the Adventist worldview and its philosophy for teaching students the content and skills to serve society: *purpose, plan, practice, and product*.¹ The last stage—*product*—addresses assessment and aligns well with research conducted by Marzano² and McTighe.³

Both educational researchers advocate the use of formative and summative assessments to enhance student achievement, thus making it clear that assessment involves more than merely giving students grades. The products should be representative of the various assessment approaches used within the classroom.

The purpose of this article is to explain each area within the *product* stage and to provide selected K-8 classroom assessment samples and web links for teachers to use. Products for conducting formative and summative assessments come in various forms.⁴ Traditionally, paper-and-pencil tests have been used for both types of assessments. In the 21st century, teachers also have access to both nondigital and digital classroom assessments. These products can be

used for individual and group evaluations. They can be collected before, during, and at the culmination of instruction to provide evidence of student learning. These products can assist in remediation and advancing instruction; they also can offer evidence that schools are accountable to their standards and learning outcomes. Most importantly, how the products are created, evaluated, and validated as a measure of learning depends on the teacher's knowledge and use of formative and summative assessment tools.

Differences Between Formative and Summative Assessments

Most people think that tests are the primary type of product available

BY CHARLINE BARNES ROWLAND

to assess learners. However, there are two difference types of assessments—formative and summative—that should be used to evaluate the learning of subject matter. Many classroom products can contribute to each type of assessment. The differences between formative and summative are shown in Chart 1.⁵

Pre-Assessment

Teachers need to ask this question, “*What information should be collected to inform instruction?*” prior to implementing the lesson. Pre-assessment is a way to determine what students know about a topic before they receive instruction about it. It helps to identify learner profiles and to activate prior knowledge.⁶ Learner profiles can be compiled by using a worksheet or conversation that helps teachers learn about students’ skills, strengths, interests, barriers to learning, and even about their family dynamics. Using learner profiles can help teachers build relationships and adapt lessons for students. They should be used regularly in all curricular areas. At the beginning of each lesson or unit, pre-assessments should be used to make instructional decisions about the strengths and needs of students, to create flexible groups, and to determine which students need remediation or advanced instruction. Chart 2 describes four basic types of pre-assessment tools that are commonly used in classrooms.

Formative Assessments

Formative assessments are evaluations of students’ classroom learning progress. Teachers can use a variety of types of assessments in addition to pencil-and-paper tests to gain an understanding of their students’ progress. Common formative assessments include individual assignments, games, group activities, projects, and presentations. They work best when used on a regular basis (for example, weekly quizzes or unit projects). Formative assessments can involve self- and peer evaluations, which allow for more flexibility and

Chart 1. Definition, Purpose, and Characteristics of Formative and Summative Assessment

	Formative Assessment	Summative Assessment
Definition	Provides ongoing feedback to help learners improve their learning	Usually conducted at the end of instruction to assess mastery of learning outcomes
Purpose	FOR student learning	OF student learning
Characteristics	Easy to create and use	Strong focus on reliability and validity
	Aligned with learning outcomes	Aligned with learning outcomes
	Conducted frequently as an integral part of instruction (progress monitoring)	Given at the end of a chapter/unit/course/term
	Data can be used to facilitate growth in learning.	Results can be used for comparative data/accountability.
	Low stakes	High stakes

Chart 2. Four Basic Types of Pre-assessment Tools

Name	Website	Description
Online Learning Platforms	https://kahoot.com/	An online, game-based learning platform that can be used for individuals and groups.
Surveys/ Questionnaires/ Inventories	http://www.readwritethink.org/classroom-resources/lesson-plans/creating-classroom-community-crafting-391.html?tab=3	Digital surveys are created with open and closed questions to obtain information from learners; or the teacher can use creative formats such as poetry to help students learn about one another and him or her.
Student Interviews	https://www.edutopia.org/article/3-tips-using-conversations-assessment	Interviews allow for conversations on a deeper level about a lesson, topic, or skill. Forms can be created to identify students’ likes and dislikes. Students can also use this technique to interview a classmate. Interview forms can contain a variety of questions and even give students the opportunity to write questions they wish to ask as part of peer interviews.
Teacher Observations/ Checklists	https://www.trivalleycsd.org/site/handlers/filedownload.ashx?moduleinstanceid=16&dataid=44&FileName=student%20observation%20form.pdf	Observation checklists enable the teacher to identify skill gaps and problem areas that require adaptations in teaching strategies, classroom settings, and student learning development.

creativity in evaluating how well students are learning. Formative assessments enable teachers to pace their lessons and to vary the tasks in order to address students' strengths and needs.⁷

Concept-based and Skill-based Assessments

The NAD core curriculum, which can be adapted to curricula used in other nations, includes two types of formative assessment by which classroom teachers evaluate learners' conceptual knowledge and skills. The first one, **Formative Concept-based Assessment**, focuses on conceptual knowledge. Throughout their instruction, teachers need to ask: "What evidence is being collected to demonstrate that learners understand the concepts?" The general view among philosophers, cognitive psychologists, and educators is that human beings come to understand concepts through an active process of being taught and observation, allowing them to adapt the learned concepts to new and different experiences.⁸

Conceptual (Declarative) Knowledge refers to the knowledge or understanding of concepts, principles, theories, models, classifications, and relationships. It cannot be learned by rote. "Conceptual Knowledge is best learned through reading, viewing, listening, experiencing, or thoughtful, reflective mental activity."⁹ Therefore, teachers must regularly conduct various formative assessments to document students' levels of conceptual understanding in meeting standards as described in Chart 3.

The second formative assessment within the NAD core curriculum is **Formative Skill-based Assessment**. When focusing on skill development, teachers need to ask: "What evidence will be collected to demonstrate that learners apply new skills?" Skill-based assessment is designed to measure skills required for competency in each domain. During instruction, there should be many opportunities to assess students' ability to demonstrate the processes in a specific area of the subject matter, as illustrated in the writing-

Chart 3. Some Formative Assessments for Conceptual Knowledge

Name	Website	Description
K-W-L (Know-Want to Know-Learned) Chart¹¹	https://msu.edu/course/cep/886/Reading%20Comprehension/7Learn_Serv_Proj_KWL.html	A graphic organizer that activates prior knowledge, develops a purpose for learning, and summarizes what an understanding of the concepts looks like.
Concept Map¹²	https://www.readingrockets.org/strategies/concept_maps	A visual organizer of knowledge. It shows concepts and ideas and points out relationships among them.
3-2-1¹³	http://www.readwritethink.org/classroom-resources/lesson-plans/reading-informational-texts-using-951.html	A post-learning structure in three steps that allows students to record their comprehension and summarize their learning. It also gives teachers the opportunity to identify areas that need re-teaching as well as areas of student interest.

Chart 4. Writing Development Checklist

1st Grade Writing Skills	No Evidence of Skill 0%	Skills Emerging <50%	Skill Used Inconsistently <50%	Skill Mastered <90%
1. Student can draw a picture and write a simple sentence.				
2. Student can write a simple sentence using a capital letter.				
3. Student can spell three- and four-letter words phonetically.				
4. Student can write lowercase and capital letters legibly.				
5. Student can illustrate and write text to express thoughts and ideas.				
6. Student can include details in pictures and writing.				
7. Student can write complete sentences using capital letters and periods.				
8. Student can correctly spell three- and four-letters words and high-frequency words.				
9. Student can write legibly and space words within a sentence.				

Sidebar 1. Digital Resources

Resource	Website	Description
Khan Academy	https://www.khanacademy.org	In standards-aligned lessons that cover K-12 subjects, students practice at their own pace, first filling in gaps in their understanding and then accelerating their learning. Free for learners and teachers.
MusicTheory.Net	http://www.musictheory.net	Free online lessons and exercises in music.
Quizizz	https://quizizz.com/join	A free website that offers quizzes and activities to help students review concepts found in math, language arts, social studies, science and even STEAM (S cience, T echnology, E ngineering, A rts, and M ath). Use the homepage to search for the desired topic.
ReadWorks	https://www.readworks.org/	Text K-12 students can use to practice reading comprehension skills.
Scholastic – Learn at Home	http://www.scholastic.com/learnathome	Learning journeys that are accessible on any device. The projects are designed to limit the need for printing and to allow students to learn independently or with their families.
Starfall (K-2)	https://www.starfall.com/h/	Activities that allow children to have fun while learning reading skills through positive reinforcement in a brightly colored environment full of activities, games, and songs.
Storyline Online	https://www.storylineonline.net/	A children’s literacy website that provides free storytelling videos and resources. Each video includes an activity guide with lessons for grades K-5.
Time for Kids	https://www.timeforkids.com/g34/	A news magazine for students that includes current event articles. Topics correlate to social studies, science, and language arts.
Vocabulary Practice	https://www.vocabulary.com/login/	A variety of vocabulary lists for all levels.
Xtramath	https://xtramath.org/#/home/index	Focuses on developing math fact fluency.

development checklist in Chart 4.¹⁰

While there are many Subject Matter Worksheets/Handouts in textbooks, I have found these selected K-12 online resources can provide excellent skill-based exercises for both regular and special-education students. The assessments not only provide grades on the materials, but also analytics on how students are processing the content within a digital environment.¹⁴ The 10 digital resources in Sidebar 1 also can be added to your toolbox to facilitate supplemental learning.

Products as Summative Assessment

The final stage of assessment is summative assessment. At the conclusion of student learning, teachers need to ask themselves: “*What standards-based assessments measure these learners’ achievement?*” A follow-up question for consideration is: “*Which assessments are being used and documented to accommodate students with learning disabilities and other special needs?*” Summative assessments are evaluations of what a person has learned in class as well as how prepared he or she is to progress to the next academic level.¹⁵ Common summative assessments include unit tests, final exams and projects, research papers, and portfolios. They are often cumulative and used to evaluate learners’ long-term retention of concepts and skills.

Unless teachers break a course into manageable chunks, summative assessments almost always take place at the end of a course, unit, or term. Reflection and critical thinking are necessary skills for students to prepare for the next step to succeed from formative to summative assessments. At the end of their reading unit on “Four Perfect Pebbles: A Holocaust Story” by Lila Perl and Marion Blumenthal Lazan,¹⁶ I asked my middle school students to write a 300-word paper on what reading the book meant to them. I used a sum-

mative product example—a rubric—to evaluate their unit papers in terms of word choice, organization, reasons, fluency, and mechanics. (See Rubric example below.)

Rubrics for Formative and Summative Assessments

Finally, one type of evaluation that can be used for both formative and summative assessments is a rubric. Brookhart defines a rubric as “a coherent set of criteria for students’ work that includes descriptions of levels of performance quality on the criteria.”¹⁷

There are two types of rubrics:¹⁸

- Wholistic – overall impression of a learner’s work, resulting in single score;
- Analytic – separate scores for each distinct trait, dimension, or criteria.

A teacher can choose a wholistic rubric or use one facet (analytic) to create a rubric. However, a rubric is never complete for summative assess-

ment until it has been used several times in order to sharpen the descriptor within each criterion. Teachers can tweak the rubric after the assignment or reuse the rubric with a new group of students to improve its scoring criteria.

This data analysis will confirm its validity and reliability. In the unit paper rubric shared earlier, I worked with other teachers to identify the standards for the written paper, after which we worked on each criteria and descriptor. We also field-tested this rubric with one class and made revisions before using it the next term.

Assessment and Teacher Effectiveness

Teachers need to avoid overusing assessments in determining students’ placement in school, as Black and Wiliam advised that “assessment cannot be understood without a consideration of the wider context within which that assessment takes

place. Teachers and schools are constrained, at least in the short term, by the cultural traditions, the political and public expectations of education, and the norms of the various institutions within which they operate.”¹⁹

Many learners can overcome their challenges in life, including having low scores on assessments. God’s focus is on restoring relationships more than about academic achievement: ““You shall love your neighbor as yourself.” There is no other commandment greater than these” (Mark 12:31, NKJV).²⁰ The qualities that the world sees as necessary for success do not always align with what God values. A well-known author put it this way, “Higher than the highest human thought can reach is God’s ideal for His children. . . . Before the student there is opened a path of continual progress, an object to achieve, a standard to attain that includes everything good, pure, and noble.”²¹

What Did Reading *Four Perfect Pebbles* Mean to Me?

Scoring Rubric:				Paper Code:	
Score	Word Choice	Organization	Reasons	Fluency	Mechanics
5	Rich vocabulary; Appropriate tone	Clearly structured paper; Strong, logical progression	Strong evidence of reflection; Deep textual support offered	Sentence structure is varied; Paragraphs are connected and well-constructed	Paper is appropriate length; Paper answers assigned question directly
4	Effective vocabulary; Reasonable tone	Demonstrates structure and logical progression	Some evidence of reflection; Some textual support offered	Sentence structure is varied; Paragraphs are somewhat connected and constructed	Paper is reasonable length; Paper answers assigned question somewhat
3	Simplistic vocabulary; Reasonable tone	Reasonably structured paper; Moderately logical progression	General evidence of reflection; Some textual support offered	Sentence structure is somewhat varied; Some paragraphs demonstrate transitions	Paper is reasonable length; Paper answers assigned question minimally
2	Simplistic vocabulary; Weak tone	Lacking in structure and logical progression	Evidence of reflection minimal; Little textual support offered	Sentence structure is simplistic; No transitions	Paper is short; Paper answers assigned questions minimally
1	Poor vocabulary; No awareness of audience	Poor structure and lacking in logical progression	No evidence of reflection; No textual support	Sentence structure is simplistic and unvaried; No transitions	Paper is not appropriate length; Paper does not answer assigned question
Total Score _____ out of 25 possible points					

An example of this is demonstrated by songwriter and singer of “I Can Only Imagine.” Bart Millard wrote about his troubled childhood and poor relationship with his father. However, in school, Bart learned to use his many talents through football and choir activities, and collectively, these experiences helped him to wholistically grow and develop into a professional musician.²² Educators need to assess all aspects of academic, physical, social and spiritual development for students to have life options, not life limitations.

Research has found that teacher effectiveness has more impact than teaching effectiveness.²³ *Teaching effectiveness* refers to the effect of teaching on student learning. *Teacher effectiveness* refers to a teacher’s influence on students, families, communities, and colleagues. Teacher effectiveness is measured by the impact a teacher’s characteristics (disposition) and qualifications have on teaching and student achievement. Teachers should consider assessing their relationship with their students and others by using the self-reflection questions listed below.

Conclusion

For both teaching effectiveness and teacher effectiveness to function well in the classroom, teachers need to use their assessment knowledge and skills to ensure documentation for and of student learning. For student learning, teachers need to set meaningful goals and give students choices in the assessment process. For example, students could collaborate in designing a quiz. This allows them to practice writing and answering test items (instead of just relying on a study guide).

When assessing student learning, teachers can use multiple measures of what students understand and have mastered as the result of the instruction. Collecting and displaying classroom products from these various measures is one way. Using the four product stages within the North American Division Adventist elementary core curriculum will enable teachers to design, implement, and assess students’ progress. Teachers will also have opportunity to gather various forms of products to showcase the learning of the whole child and to reflect on the effectiveness of their use of instructional methods. ✍

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Charline Barnes Rowland, EdD, is Department Chair in Education at Bethany College in Bethany, West Virginia, U.S.A. A

former classroom teacher and reading specialist, she has published and presented on literacy instruction and assessment, culturally responsive pedagogy, and professional development of educators. She was a 2003 U.S. Core Fulbright Scholar at the University of West Indies (UWI), Cave Hill, Barbados. Dr. Rowland also was an elected board member (2003-2006) of the International Reading Association (now International Literacy Association), and recipient of the 2012 IRA Jerry Johns Outstanding Teacher Educator in Reading Award.

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Teacher Relationship Assessment	Biblical Text
1. Am I living up to God’s standard of loving learners (and their families), regardless of what experiences they bring into the classroom? ²⁴ https://www.universities.com/articles/10-students-who-overcame-massive-obstacles-to-achieve-their-dream-of-an-education/	“Do not seek revenge or bear a grudge against anyone among your people, but love your neighbor as yourself. I am the LORD” (Leviticus 19:18, NIV).
2. Am I helping students engage in growth mindset activities that will help them have positive and resilient thoughts throughout triumphs and trials? ²⁶ https://biglifejournal.com/blogs/blog/teach-growth-mindset-kids-activities	“And do not be conformed to this world, but be transformed by the renewing of your mind, that you may prove what is that good and acceptable and perfect will of God” (Romans 12:2, NKJV).
3. Are my daily prayers asking God to put good things in my mind, mouth, heart, hands, and feet so that I can be kind and responsible as I fulfill my teaching duties? https://thefaithfilledteacher.com/a-teachers-prayer-for-every-morning/	“The good person out of the good treasure of the heart produces good, and the evil person out of evil treasure produces evil; for it is out of the abundance of the heart that the mouth speaks” (Luke 6:45, NRSV).

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