

White Paper: Learning.com Curriculum Design Framework

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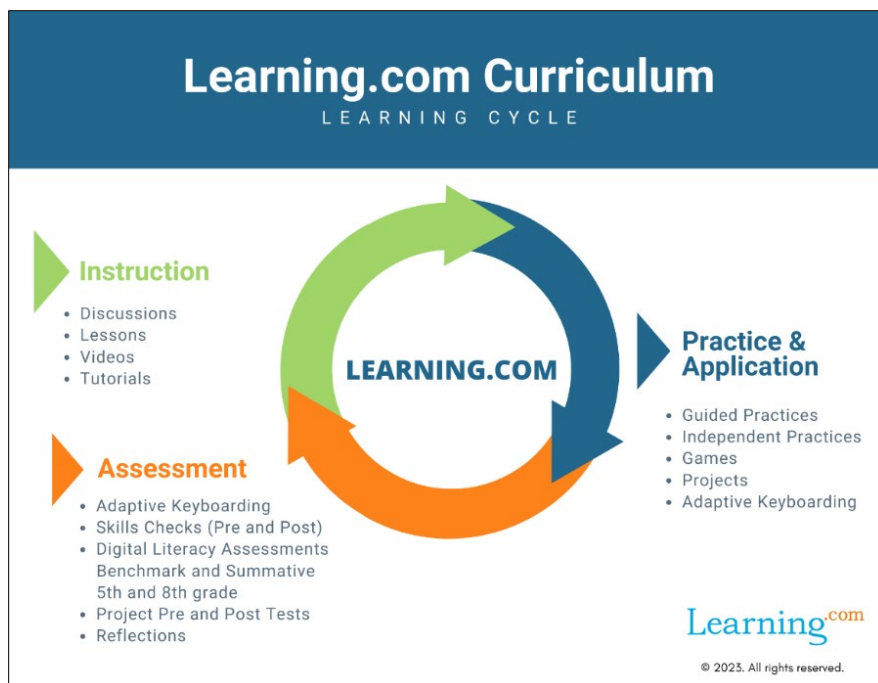
Background

Learning.com was established in 1999 as a provider of digital literacy skills curriculum materials to help prepare students for success in a digital world. The original curriculum materials were designed based on key components from the Science of Learning and pedagogical best practices for instruction. During Learning.com’s over 20 years of producing digital literacy skills learning experiences, pedagogy has remained at the forefront of the design process. With former and current educators ideating, designing, creating, and reviewing curriculum materials, Learning.com provides students with learning experiences that are based on proven and updated methods for teaching and learning.

Introducing the Learning.com Learning Cycle

The Learning.com Curriculum Learning Cycle was designed to ensure that students receive instruction with corresponding practice and application opportunities to deepen their learning experience. Formative and summative assessments are built into the learning cycle as a way of evaluating where strengths and weaknesses exist for each individual student so that teachers have data to drive instruction. The goal of the learning cycle is to provide students with learning experiences that will set them up to productively transfer their knowledge and skills to future experiences. By providing students with engaging learning experiences that connect past learning to present learning, students are more likely to remember what they have learned (Fernández & Morris, 2018). See Figure 1.

Figure 1: Learning.com Curriculum Learning Cycle



Learning Cycle Components

In designing the components of the learning experience, Learning.com uses concepts from the Science of Learning, as presented by Clark N. Quinn, Carol Ann Tomlinson and Robert Marzano. See Table 1.

Table 1	
Concept	Type of Learning Experience
Reinforce thinking, creativity, and identity to activate the brain	Instruction, Practice & Application
Chunk concepts into meaningful configurations to create memory	Instruction & Practice
Encode concepts through elaboration by building upon existing knowledge	Instruction, Practice & Application
Provide opportunities to retrieve and apply knowledge and skills through practice	Practice & Application
Provide performance experiences to transfer knowledge and skills based on a situation’s context	Practice, Application & Assessment

The learning objectives and intended outcomes impact the instruction, practice, and application experiences in the Learning.com Curriculum Learning Cycle. As digital literacy includes both declarative and procedural knowledge, a variety of learning objects have been designed to create a more fluid learning experience for students that supports the goal of providing students with long-term learning of concepts. When students complete interactions similar to real world-like behavior, they are more likely to remember and transfer their learning for the long term (Edwards, 2021). The Learning.com learning objects include:

- Instructional videos that provide instruction through storytelling
- Lessons that incorporate direct instruction and practice for related concepts
- Guided practice to provide support while practicing a newly learned concept
- Independent practice that provides the opportunity to practice without guidance
- Games to tie motivation to additional practice of concepts
- Application opportunities that provide real world like-experience to transfer knowledge and skills into a product
- Reflection on learning to evaluate what was learned, how the experience impacted understanding and the need for further learning
- Skills Checks (pre and post) to provide data on areas of strength and weakness based on specific digital literacy concepts to assist teachers in adjusting the learning experience to meet the individual needs of students
- Digital Literacy Assessments (pre and post) to evaluate all digital literacy skill concepts at learning checkpoints in 5th and 8th grade

By providing instruction in ways that support student learning through a helpful and mentoring voice and characters, students are more engaged in the learning experience (Edwards, 2021).

Through rigor and relevance in the practice and application experiences, students can become empowered learners.

Instructional Components

Modeling concepts, skills, and processes are an important part of the instructional process (Marzano, 2017) that must be included in both in person and digital learning environments. Evoking enjoyment, surprise, empathy, and relevance during the learning process connects cognition and learning in a more effective and durable way (Tomlinson & Sousa, 2020). In support of both aspects of the teaching and learning process, the Learning.com instructional videos and lessons include elements of storytelling which help students experience thinking, sensing, and feeling as they learn new concepts and build on previously introduced concepts. Additionally, by using elements of humor in the learning experience the instructional videos and lessons boost memory retention, generate motivation, and reduce anxiety while learning new concepts (Quinn, 2021). As students in K-12 benefit from a combination of visual and auditory stimulus as well as interactivity as they are learning new concepts (Noetel, et al, and Quinn, 2021), the following components are included in the Learning.com digital instructional components to help support understanding of new concepts:

- Visual demonstrations as concepts are being described
- Vocabulary words appear on screen
- Subtitles or on-screen text align with audio

To provide differentiation and additional support resources for students, printable resources are being updated and included within components of the digital curriculum materials. As an example, a printable poster may be provided to accompany an instructional video so that the learning objectives are reinforced. This provides the teacher with an opportunity to share resources in the classroom or to send home with students. Additionally, for a digitally interactive practice, teachers may be provided with a printable companion activity that could be used to extend practice or be sent home for students with limited access to the internet. The intent of providing printable support materials that align with digital learning experiences is to provide teachers with guidance and resources to support the learning needs of a variety of students whether digital or offline.

Practice Components

Clark Quinn (2021) noted that practice shapes behavior and is the core of the learning experience. The Learning.com Curriculum Learning Cycle includes guided practice, independent practice, and games to support student learning. The practice experience focuses on the concepts that the students learn in the instructional videos and lessons and aligns to the storyline. This practice aspect of the learning process helps students build connections to facilitate their learning as they analyze, process, and build on concepts learned (Marzano, 2017).

- Guided practice - students practice the skills, processes or knowledge learned in a progression from simple to more complex with support from the digital learning experience

- Independent practice – students use the knowledge and skills gained to practice while completing an assignment on their own
- Game – students use the knowledge, skills and processes in an environment that motivates them to continue to practice what they have learned

Application Components

When students engage in a project or experience that allows them to create an artifact, they are able to apply what they have learned in a unique situation (Marzano, 2017). This transfer of knowledge and skills helps to solidify their understanding of concepts in a way that will impact their ability to transfer their knowledge and skills to future experiences. Additionally, students need to be able to apply what they have learned to determine ways to solve problems, generate new ideas and apply logic and reasoning in explaining their thinking or ideas (Barrett, 2017). The Learning.com application exercises and projects provide students with real world-like opportunities to think critically as they evaluate, problem solve, make decisions, create artifacts and share their work. Upon completion of an application experience, students are encouraged to reflect on their learning experience as it ties to the concepts learned and to themselves as learners. Reflection helps lead to stronger learning as it encourages students to think about the concepts they learned, build connections between new and applied learning, and think about what they might do differently during their next learning experience (Brown, Roediger & McDaniel, 2014).

Assessment Components

Pre-assessments and post-assessments are included in the Learning.com Curriculum Learning Cycle to evaluate students' areas of strength and weakness related to digital literacy skills. Pre-assessments should be administered before new concepts are introduced as they expose students to upcoming information and evaluate prior knowledge (Marzano, 2017). Skills Checks (pre and post versions) are designed to help teachers gain understanding about the knowledge and skills that students have related to essential digital literacy skills. The Digital Literacy Assessment (pre and post versions) is intended to evaluate students' abilities in applying digital literacy skills to empower their learning. The Digital Literacy Assessment is cumulative based on all digital literacy concepts from grades K-5 and from grades 6–8 whereas the Skills Checks are based on knowledge and skills for a specific concept area in a specific grade level in grades 3-8. Skills Checks and Digital Literacy Assessment are intended to help teachers better understand what students do and do not know so additional learning opportunities may be provided to improve areas of weakness.

Learning Module

The components of the Learning.com Curriculum Learning Cycle work together in modules of instruction that address declarative and procedural knowledge and skills. The learning experiences are designed to provide students with a path that provides the best opportunity to learn from foundation to transformation. The modules include instruction, practice and application tied to a specific concept area to help students build connections to the concepts and the characters. The individual learning objects within each learning module have been

added to the student learning path (asynchronous and blended options) in a predetermined sequence to ensure that students receive all components in the designed order.

High-quality Curriculum

High-quality curriculum is built with high expectations for learning, is aligned to rigorous state and national standards and maximizes student learning potential (Barrett, 2017). The Learning.com curriculum materials are designed with learning objectives and pedagogy at the foundation of the curriculum design process. Each learning object is aligned to a variety of state and national standards to meet the needs of a diverse group of users. One goal of high-quality curriculum is to empower students to develop critical thinking and communication skills (Hartle & Riley, 2021) along with developing higher order thinking and application skills. To do this, students need to experience inquiry, produce ideas and solutions, problem-solve, experience curiosity, and develop the ability to learn independently (Darling-Hammond, 2019). Learning.com provides students with a pre-determined learning path that includes aspects of high-quality curriculum throughout the learning experience whether the delivery method is asynchronous or blended. Districts, schools, and teachers can use the same high-quality curriculum components to create unique learning paths based on their needs and the learning needs of their students.

Evaluating Digitally Delivered Curriculum Materials

When deciding if digitally delivered curriculum materials are right for the district, school, classroom, and students, it is important to think through the following:

- Does the curriculum align to standards that meet the needs of your learning environment?
- Do the provided curriculum materials align to the expected learning outcomes and provide data for measuring growth and areas of weakness for reteaching?
- Is there evidence of rigor and relevance in individual learning objects?
- Is there evidence of a pedagogically sound learning cycle that guides the learning experience?
- Are there a variety of modalities (visual, auditory, kinesthetic, and tactile) used to provide an engaging learning experience that activates all areas of the brain?
- Are teachers provided with support to meet their needs?
 - Resources that show how to implement and use the curriculum materials
 - Data to evaluate students and drive further instruction
- Is the source of the curriculum materials credible and do they have the necessary knowledge and experience to ensure accuracy of the information included?

With over 20 years of experience in designing and developing curriculum based on the science of learning, pedagogical best practices and understanding what teachers and students need to be successful, Learning.com supports the mission of preparing students for success in our digital world.

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