

WHITE PAPER

Edgenuity: Supporting Personalized Learning

The Growing Concern

Today's classrooms are more racially, economically, and linguistically diverse than ever before. According to data from the National Center for Educational Statistics (NCES), the percentage of Hispanic students enrolled in U.S. public schools now exceeds the percentage of Black students. Data also show that while the percentage of Asian students is steadily on the rise, the percentage of White students is quickly declining.¹ In addition, new studies confirm that the percentage of school-age children living in poverty has increased in every state since 1990.² Further, students who speak a language other than English at home are among the fastest-growing school-age populations, making up 21 percent of the U.S. public school enrollment. Moreover, experts estimate that these English language learners come from array of cultures speaking more than 325 different languages at home.³ They also bring to the classroom a wide range of reading and mathematics abilities. Is it possible for teachers to address students with such divergent needs?

Unfortunately, recent domestic and international test results suggest that too many students are not being served by our one-size-fits-all education system. According to the 2013 National Assessment of Educational Progress, more than 64 percent of eighth-grade students scored below the proficient level on the reading and mathematics tests.⁴ Similarly, data from the latest Programme for

International Student Assessment (PISA) indicate that U.S. high school students ranked thirty-first in math, twenty-fourth in science, and twenty-first in reading in a comparison with students from sixty-five other countries.⁵ These findings show not only that American students struggle to recall rote procedures and facts, but also that they are not able to analyze, reason, or communicate effectively. Data also show large achievement gaps: low-income, African American, and Latino fifteen-year olds perform years behind their peers.

Educators recognize the importance of calibrating instruction to meet learners' unique academic requirements. However, creating individualized lesson plans for a classroom of thirty students can be overwhelming. Increasingly, a growing number of educators are turning to technology to offer personalized learning that addresses students with differing abilities in the same class. Personalized learning is an approach to teaching that organizes learning around individual student needs rather than grade-level content. The objective is to facilitate and optimize student learning by meeting each student where he or she is.

Edgenuity MyPath Program: Supporting Personalized Learning

Edgenuity MyPath is a supplemental program designed to meet students where they are in reading and math—and give them exactly what they need to catch up, keep up, or get ahead. Designed for students in grades 6–12, MyPath provides instruction in reading and math skills and concepts from grades 3–11. Through assessments, individualized learning paths, and detailed reports, Edgenuity MyPath provides students with age-appropriate online lessons and gives educators the ability to monitor academic progress easily. Students are assigned individualized learning paths based on skill level, not grade level, to ensure they are focusing on the skills they need to succeed. And with age-appropriate content for struggling adolescent students, instruction is engaging and respectful of older learners.

Researchers have pinpointed five hallmarks of effective personalized learning environments. These principles are incorporated into Edgenuity's MyPath program:

1. Effective personalized learning environments use initial and ongoing assessments and real time feedback to inform instruction.

Lai and Schildkamp (2013) summarize a large body of research that demonstrates that when teachers use data to shed light on learners' strengths, challenges, interests, and aptitudes and set instructional learning targets student achievement improves.⁶ The authors assert that when educators have a clear purpose for data, as well as the ability to contextualize, categorize, summarize, and make sense of what the data mean, they can more effectively “set appropriate student learning goals; can monitor and check to see if students are reaching their goals; and can support students in developing the ability to monitor and check their own goal attainment.” As Tomlinson and Sousa (2011) point out “students learn better and feel better about themselves when teachers diagnose their current skill levels and prescribe tasks appropriate for their points of readiness.”⁷

Research evidence strongly favors using multiple sources of data to drive instruction. By revealing students' strengths and unveiling opportunities, data help teachers harness and allocate resources more efficiently and respond to students' explicit requirements.⁸ Experts agree that educators need to be taught how to use this data to diagnose students' learning needs, identify appropriate instruction, and monitor student progress. As the What Works Clearinghouse points out, when students are taught to examine their own data, teachers can engage in important dialogues about learning that can improve student achievement.⁹

According to the National Research Council, an important element of personalized learning environments is “explanatory feedback that helps learners correct errors and practice correct procedures.” Multimedia learning environments of the type presented in online courses are well suited to providing this kind of practice with specific, immediate feedback.¹⁰

Our solution: Edgenuity MyPath offers a wide array of assessments to diagnose, treat, and monitor student skills:

- **Formative Assessments:** At the beginning of each course, educators have the option of using an Edgenuity-designed placement test to assess students. Alternatively, schools can import data from the Northwest Evaluation Association™ Measures of Academic Progress® (MAP®) test. Data from either assessment is used to recommend appropriate instruction for each student.

- **Interim Assessments:** Curriculum-based quizzes after each lesson assess students’ mastery of the lesson objectives. Using Webb’s Depth of Knowledge and Bloom’s Taxonomy, items are classified based on their level of difficulty. A pre-testing setting for mathematics allows students to use these quizzes to place out of specific topics they may already know.

- **Summative Assessments:** These are provided at the end of each ILP to evaluate students’ overall performance. Similar to interim assessments, summative assessments classify items using Webb’s Depth of Knowledge and Bloom’s Taxonomy.

View Standards	Lesson	% Struggling	# Struggling	# In this Lesson	Avg Quiz Score	Avg Quiz Attempts	Avg Lesson (h:mm:ss)
Standards	Describing Part to Part Relationships	35%	16 out of 46	2	70.5%	1.9	1:10:41
Standards	Using Ratio Notation	35%	16 out of 46	0	72.5%	2.1	1:01:45
Standards	Equivalent Ratios	35%	16 out of 46	0	84.2%	1.9	1:08:32
Standards	Patterns in Multiplication Tables	33%	15 out of 46	0	76.9%	2.2	0:55:25
Standards	Equivalent Ratios in Measurements	31%	14 out of 46	0	81.8%	1.8	2:00:27
Standards	Understanding Unit Rates	30%	14 out of 46	0	79.4%	2.3	0:53:09
Standards	Comparing Ratios	30%	14 out of 46	0	71.2%	2.7	0:47:07
Standards	Ratios in Real-World Situations	30%	13 out of 46	0	70.3%	1.4	2:01:45

Edgenuity MyPath reports give educators access to real-time data on progress and mastery.

After students complete each assessment, they receive immediate, corrective feedback that reinforces correct performance and helps them make adjustments as needed. Real-time data is available for teachers via Edgenuity MyPath’s dashboard and fourteen additional reports that display information on single-student, group, school, and district engagement, progress, and achievement data. A lesson mastery report ensures teachers can track what skills students need additional support.

Edgenuity’s *Customer Support Specialists and Professional Development Consultants* provide strategic consulting and training to ensure educators understand how to use the data from the reports to inform and target their instruction. By transforming data into actionable information, teachers can truly personalize learning to meet every student’s needs.

2. Effective personalized learning environments offer customized learning paths based on students’ ability profiles.

Cognitive theorists suggest that in order to maximize content mastery, instruction must be respectful and carefully consider a student’s unique abilities. For example, Lev Vygotsky asserts that effective learning takes place in the “zone of proximal development.” This learning “zone” is where students cannot function alone, but can succeed with support and coaching. In order for students to grow academically, instruction should be slightly higher than a student’s level of mastery. Effective personalized learning environments take this into account by adopting the concept of “readiness.” In this model, instruction is customized to maximize a student’s zone of proximal development.¹¹

Recent brain research supports the idea that instruction should be tailored to students’ skill levels. Neuroscientists have identified two main types of memory: short-term memory, also known as working memory, where we consciously process information; and permanent long-term memory with a much larger body of connected information. After information has been organized and stored in long-term memory, it can be accessed as needed without placing a large burden on working memory. The knowledge in long-term memory is used to understand new memories.¹² When instruction is personalized, it allows students to more readily connect new knowledge to known knowledge. This allows “memory pathways [to] become more easily accessed and cross referenced for future use.”¹³ Indeed, as Suban’s (2006) review of the research literature points out, academic achievement improves dramatically when instruction is aligned with a learner’s profile.¹⁴

Our solution: After each student takes an initial placement assessment, Edgenuity's learning management system recommends an Individualized Learning Path (ILP) for each student based on that student's performance in math and reading. The software deliberately teaches skills within a student's zone of proximal development—that is, skills are always slightly more advanced than the student's current level of mastery.

Edgenuity MyPath provides only the content and practice students need to succeed. Our foundational reading paths focus on comprehension strategies, while our basic and intermediate reading paths are more centered on literary analysis, grammar and mechanics, and writing as it relates to reading. Advanced paths expose students to great literature and develop critical thinking skills.

Our foundational math paths focus on number sense, while our basic and intermediate math paths are carefully sequenced to provide the concepts and skills required for success in Algebra, including number properties and arithmetic with integers and rational numbers, proportional reasoning and relationships, and basic algebraic manipulations. Advanced paths challenge students with instruction in geometry, trigonometry, and even pre-calculus concepts and skills.

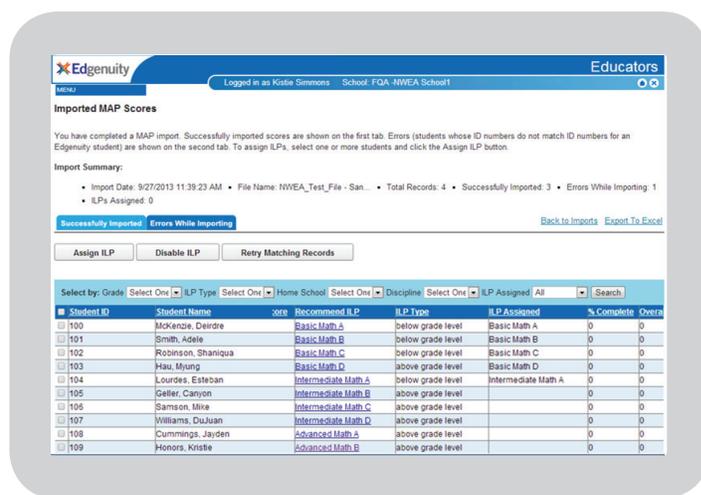
Edgenuity instruction features direction instruction videos, interactive tasks, activities, and robust practice with immediate feedback. Content at all levels of the program is age-appropriate and respectful of high school and middle school-age students.

3. Effective personalized learning environments provide explicit instruction to help students solidify concepts and skills.

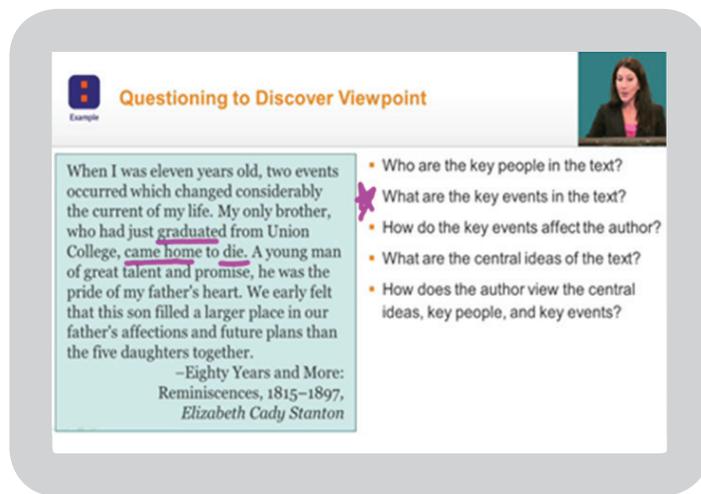
Experts suggest that direct, explicit instruction should be woven into personalized learning environments to maximize student achievement.¹⁵ Explicit instruction is a transparent, evidence-based approach to teaching that involves activating students' prior knowledge, establishing a clear lesson purpose, presenting information in small manageable segments, and providing clear instruction (including examples and modeling), providing opportunities for practice with varying levels of scaffolded support, and conducting frequent checks for understanding with appropriate feedback. Decades of research indicate that explicit instruction can improve students' comprehension of subject material across grade levels and content areas.¹⁶

Research also underscores the importance of promoting student ownership over learning—the capacity to monitor, evaluate, and control thinking while completing new tasks—in personalized learning environments.¹⁷ By providing extensive modeling, coaching, scaffolding, and problem solving, technology offers learners richer opportunities to build metacognitive skills.¹⁸

Our solution: Explicit instruction is the cornerstone of Edgenuity MyPath. Each ILP features videos of expert, on-screen teachers who deliver direct instruction, orient students to the lesson goals,



Edgenuity MyPath provides individualized learning paths for students



An on-screen teacher models reading strategies for students.

introduce skills and concepts in manageable segments, and offer clear and concise explanations of subject matter. Edgenuity makes extensive use of models and demonstrations, including worked examples of problem-solving strategies and procedures.

On-screen teachers not only model the thought processes that underlie specific strategies, but also emphasize the conditions for applying a body of factual or procedural knowledge.

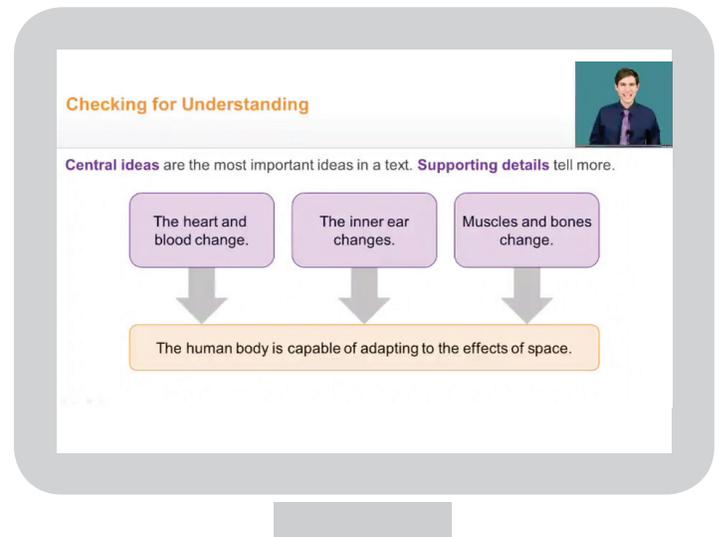
Throughout Edgenuity MyPath lessons, students are consistently provided with extensive opportunities to practice new skills, starting with a high level of support and transitioning to less support as they become more experienced and demonstrate increased competence.

4. Effective personalized learning environments make instruction accessible for all.

Learners vary greatly in the ways they process content material. Research confirms that students are better able to understand complex content when key information and tasks are explained using a wide array of modalities (verbal, visual, graphic, and symbolic) and instructional formats (video lectures, graphic displays, audio files, and simulations). Learning is also enhanced when students are provided with multiple ways to develop and express their knowledge and engage with content.¹⁹ Digital, personalized learning environments are particularly useful in fostering the accessibility of content by offering learners more options for applying knowledge and skills.²⁰

Our solution: Edgenuity MyPath lessons leverage Universal Design for Learning (UDL) principles to provide students with multiple means of representation, expression, and engagement.

- **Multiple Means of Representation:** Edgenuity courses use video lectures, graphic displays, text, simulations, video captioning, and read-aloud support features. On-screen teachers explain concepts using verbal, concrete, manipulative, numerical, graphical, and symbolic representations. Graphic organizers are included in instruction, tasks, and assignments.
- **Multiple Means of Expression:** Throughout instruction and assessments, students can manipulate images, answer questions, use interactive discussion forums, highlight text, complete surveys, and fill out graphic organizers. These multiple means of expression appeal to a variety of learning styles and allow students to demonstrate their knowledge in a variety of ways.
- **Multiple Means of Engagement:** Detailed course maps and pacing guides clearly state expectations, provide students with a structured overview of course activities and objectives, and visually alert students and teachers to students' course progress and pace. Teachers can personalize instruction based on an individual student's needs. Prior to instruction, teachers can create individualized tutoring modules by customizing targeted supplemental learning blocks. Teachers can also enable various accommodations and modifications, such as allowing more time on assessments, changing passing thresholds and grade weights, and providing scaffolds like read-aloud and translation.



Graphic organizers increase access to content.

5. Effective personalized learning environments engage students in interactive activities that promote critical thinking and learning transfer.

Education researchers agree that engaging students in interactive, multisensory activities that promote elaboration, questioning, and explanation can simultaneously engage students and promote learning transfer.²¹ Games and simulations can be particularly powerful tools to help students activate prior knowledge, apply knowledge in new settings, test hypotheses, search for patterns, use evidence and logic to make arguments, solve problems, and learn from their actions.²² This kind of active engagement enables students to take ownership of their learning and improves retention of information.²³

Our solution: Edgenuity MyPath courses make learning relevant by engaging students in exciting tasks and simulations. A wide variety of activities enable students to transfer knowledge to real-world situations designed to pique student interest. Students are asked to create, predict, explore, and write. They are also challenged to make connections, predict, visualize, ask questions, monitor understanding, make inferences, and synthesize.

Endnotes

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