

Why _____
QUALITY CONTENT
_____ **MATTERS**



Why **QUALITY** **CONTENT** Matters

As a society, we would like to see every child graduate high school well prepared for college and a career. In this paper, we'll offer a practical solution to help furnish students with the necessary skills and knowledge: the adoption of high-quality educational content.

We'll present some of the ground-breaking research on the effect that quality content has on academic achievement. In addition, we'll review the guidelines and the process instrumental to creating quality content and suggest ways to evaluate it. Along the way, we'll describe some of the ways educational technology can personalize the learning experience, increase engagement, and optimize achievement.

The Need for Quality Content & the Research That Supports It

Americans ranked 16 out of 23 industrialized countries in literacy and 21 out of 23 in numeracy.³

“There is strong evidence that the choice of instructional materials has large effects on student learning—effects that rival ... teacher effectiveness.”

While our high school graduation rates are at an all-time high,¹ our graduates’ skill sets, as compared to those of other nations, are at an all-time low.²

As the demand for candidates with strong writing, analytical, and mathematical skills continues to increase, graduates who lack these skills will find it more challenging to find employment.

There are numerous factors that affect student learning, many of which are beyond an educator’s control (student’s home life, peers, community, culture, economic status), but a growing body of research suggests that the use of high-quality instructional materials can help raise students’ skill levels to compete in this increasingly competitive global environment.

In “Choosing Blindly,” Chingos and Whitehurst make the case for applying rigorous evaluation criteria to the selection of instructional content based on evidence that curricula impact student achievement. The authors cite a recent federally sponsored study of the effectiveness of math curricula spanning several years. The results concluded that differences in instructional materials accounted for a difference of 0.17 standard deviations in student achievement. By way of comparison, a review of ten studies on the impact of teacher quality found that teacher effectiveness impacted student achievement by 0.08–0.11 standard deviations.⁴

1. Lyndsey Layton, “National High School Graduation Rates at Historic High, But Disparities Still Exist,” Washington Post, accessed August 8, 2014. http://www.washingtonpost.com/local/education/high-school-graduation-rates-at-historic-high/2014/04/28/84eb0122-cee0-11e3-937f-d3026234b51c_story.html

2. Douglas Belkin, “Younger Americans Fare Poorly on Skills Against International Peers,” Wall Street Journal, accessed September 15, 2014. <http://online.wsj.com/news/articles/SB10001424052702303442004579122193775018938>

3. Ibid.

4. Matthew M. Chingos and Grover J. “Russ” Whitehurst, “Choosing Blindly: Instructional Materials, Teacher Effectiveness, and the Common Core,” Brown Center of Educational Policy at Brookings, 2012

“Content has the most substantial impact on achievement growth.”

In a study sponsored by the American Educational Research Association, Carbonaro and Gamoran examined the factors that contribute to unequal achievement outcomes for students. Focusing on high school English instruction, the authors evaluated four key aspects of instruction: “quantity of assignments, coherence of instruction, student voice in curricular and pedagogical issues, and the content of instruction.” Analyzing data from over 8,000 students tracked in Grades 8–12, the researchers found that of the four instructional dimensions studied, content quality had the greatest impact on student outcomes.⁵

“The positive impact of the standards-based programs on student performance was remarkably consistent.”

In 2001, Riordan and Noyce examined the impact of standards-based curriculum on student achievement relative to “traditional” instructional programs and found statistically significant differences that favored the standards-based curriculum in nearly all dimensions of instruction. These differences were “remarkably consistent” across student demographic groups and across student ability levels. Furthermore, when controlling for other externalities, the researchers found that the differences favoring the standards-based curriculum “could not be attributed to differences in teacher qualifications ... [or] differences in self-reported teacher instructional practice.”⁶

Spending on K–12 instructional materials amounts to just one percent of the public education dollar.⁷

At the same time federal and state governments are advocating for higher standards and accountability, the percentage of education dollars that are allocated to adopting instructional materials remains at about one percent—significantly below suggested levels of 5 to 10 percent of schools’ operating costs.⁸ Thus, given the restrictive budgets, it becomes even more important for administrators and educators to carefully evaluate instructional materials and ensure that they are adopting the most effective ones for their students.

5. William J. Carbonaro and Adam Gamoran, “The Production of Achievement Inequality in High School English,” *American Educational Research Journal* (2002) 39: 801–827

6. Julie E. Riordan and Pendred E. Noyce, “The Impact of Two Standards-Based Mathematics Curricula on Student Achievement in Massachusetts” *The Noyce Foundation Journal for Research in Mathematics Education* (2001) Vol. 32, No. 4, 368–398

7. Association of American Publishers, “Instructional Materials Funding Facts,” accessed September 25, 2014. <http://publishers.org/schoolfundingfacts/>

8. Association of American Publishers, “Less than a Penny,” accessed September 25, 2014. <http://aap.memberclicks.net/assets/School/less%20than%20a%20penny%20brochure.pdf>

How Do I Recognize Quality Content?

In general terms, we describe quality content as instructional materials that are conscientiously constructed according to pedagogical standards to increase knowledge and skills. The Association of Educational Publishers sets the benchmarks for quality as:

- Clearly articulated learning goals and objectives
- Appropriate grade and reading levels
- Clearly stated reputable sources
- Engaging, relevant, and up-to-date content
- Highly vetted content that is accurate, objective, and reliable
- Differentiated learning opportunities
- Standards- and evidence-based lessons/learning aligned with high-quality assessments
- Well-designed and attractive materials for students, teachers, and other education professionals
- Adaptable materials for individual learning styles and needs
- Comprehensive teacher guide or instructional support materials⁹

Currently, there is not a widely accepted method of grading or certifying that instructional content meets these benchmarks. Administrators, educators, and parents must rely on a publisher's reputation and demonstrated ability to provide the resources, experience, and commitment required to consistently achieve these standards.

9. The Association of Educational Publishers, "Quality, Differentiation and Accessibility of Educational Resources," accessed September 15, 2014. http://www.aepweb.org/aepweb/images/Documents/Publications/Position_Papers/aepqualityposition.pdf

The **CASE²** Approach

The **CASE²** content development approach, established by **Houghton Mifflin Harcourt™**, ensures that content is pedagogically sound, builds skills, inspires creativity, closes achievement gaps, and fosters lifelong learners.



CONSTRUCT



ALIGN



SMART



ENGAGE



EFFICACY

The best instructional resources are constructed to be pedagogically sound, aligned with standards, smart, engaging, and effective.

No matter how innovative and exciting a program may be, teachers cannot use it if it does not align with their curriculum.

CASE²: Constructed to Be Pedagogically Sound

Before developing a program, editors, researchers, and curriculum experts review the latest efficacy studies, education-related research, and proposed changes to standards in search of new ways to accelerate learning and provide greater opportunity for all students.

Creating new content or updating existing content requires the collaboration of many experienced contributors including:

- Leading educators and program consultants who determine the goals and objectives of the program in alignment with the standards
- Learning architects who drive the instructional and pedagogical design and ensure that the content engages students and helps them master the intended skills and knowledge
- Authors with deep content expertise who can adapt their style, word choice, and complexity level to fit their specific audience
- Design architects who optimize content to ensure that it captures imaginations, is visually engaging, grade appropriate, and easy to use by applying their animation, user experience, and design skills
- Reviewers who check the educational materials for domain accuracy; instructional appropriateness and effectiveness; adaptability for individual learning styles and needs; and pedagogical integrity

In addition, all educational content should be tested with sample groups of students and teachers to ensure it can be implemented successfully. Content developers then decide what revisions may be necessary.

CASE²: Aligned with Standards

Every state has comprehensive curriculum standards. In addition, some have adopted additional national standards. Each state's educational materials must be aligned to their standards to ensure students have the requisite skills and knowledge to reach them. Implementing these standards requires ongoing cooperation between districts, schools, and educational providers.

CASE²: Smart

Technology paired with high-quality content presents new ways to accelerate learning, engage students, and positively impact outcomes.

Traditionally, when a teacher sees a student struggling with a concept, the teacher will adapt the instruction to the student by implementing an intervention. The intervention can be as simple as assigning a child additional reading activities.

Now, data-driven adaptive learning programs can help teachers provide the right instruction, at the right time. Each time a student uses an adaptive learning program, the program responds in real time. The program not only identifies that a student has answered incorrectly, but knows why the student answered incorrectly. The program then uses those insights to create a customized intervention for the student.

How Knewton™ Accelerates Learning

Houghton Mifflin Harcourt has partnered with Knewton, a proficiency-based adaptive learning software developer, to develop adaptive learning solutions such as the Personal Math Trainer®, powered by Knewton. As students complete activities and assessments, this adaptive learning tool automatically performs the following tasks:

- Analyzes the student's interactions to determine personal strengths, weaknesses, preferences, and pace
- Compares the student's interactions to a vast database of student interactions to identify the most effective learning strategies
- Establishes a personalized syllabus for every student to ensure the most efficient route to achieving his or her goals
- Provides the student with targeted recommendations for assignments
- Gives educators real-time insights into each student's needs, challenges, and learning styles

Engaging students
in the learning
process increases
their attention and
focus, motivates them
to practice higher-
level critical thinking
skills, and promotes
meaningful learning
experience.¹⁰

CASE²: Engage

Engaged learners are motivated learners. Content that delights them, appeals to their interests, and provides meaningful interactions encourages their participation in the learning experience. Key to creating engaging educational materials is employing user testing throughout the development process to improve product design, user-friendliness, and appeal.

Educators have long recognized the benefits of incorporating aspects of games and game theory into curriculum, including:

- Creating a story around the learning experience that delivers context
- Providing multiple chances to succeed
- Using reward systems to motivate, engage, and promote resiliency

Generally, these strategies are most effectively employed when learning architects, in collaboration with child development and game strategy experts, first define the content's educational objectives and then determine the best way to achieve them.

Another option is to create games designed to achieve specific educational outcomes. This approach requires a great deal of planning and formative research to successfully enhance outcomes. Evidence suggests that educational games work best when they are integrated with other classroom activities that deepen students' skills and understanding, such as discussions, writing about their learning, peer tutoring, and group decision making.¹¹

10. University of Washington, Teaching Resources, accessed September 9, 2014. <http://www.washington.edu/teaching/teaching-resources/engaging-students-in-learning/>

11. The Software & Information Industry Association (SIIA), "Best Practices for Using Games & Simulations in the Classroom," January 2009 http://www.siaa.net/index.php?option=com_docman&task=doc_view&gid=610&tmpl=component&format=raw&Itemid=59

CASE²: Efficacy

The defining characteristic of quality content is its ability to promote learning, foster skills, and accelerate student achievement. Since every district and student population differs, no single research study can be used as evidence of a program's success. In evaluating the likelihood that a curriculum will benefit their district or population group, educators benefit from having a variety of research designs, including:

- Foundational research that outlines how programs align with pedagogical best practices based on volumes of academic research
- Impact reports, such as case studies and testimonials, that provide valuable insights into a program's effectiveness for a specific context
- Scientific, experimental studies that assess student achievement in a more rigorous and empirical manner

When states and districts are presented with a range of research, they are better able to find studies that speak to their unique situation and evaluate which programs meet their specific needs.

The Case for CASE²

In summary, there is strong evidence that curriculum and the quality of educational content have a substantial bearing on students' achievement and outcomes. While there are no standards or grading system to help educators, administrators, and parents recognize high-quality content, there are generally accepted benchmarks, such as clearly stated goals and objectives, and grade-appropriate, engaging, highly vetted, and accurate content. Creating content that consistently meets these benchmarks requires extensive resources, experience, and a demonstrated process. A proven method to consistently creating high-quality content is the **CASE²** approach, which ensures content is pedagogically sound, aligned with standards, smart, engaging, and effective.

For more information about quality content, read our Content Manifesto at hnhco.com/manifesto.

The **HOUGHTON MIFFLIN HARCOURT** **Advantage**

For over 180 years, **Houghton Mifflin Harcourt** has been one of the most trusted sources for content. We are a leading provider of Pre-K–12 education solutions, specializing in dynamic learning content for students, teachers, kids, and parents.

Available through multiple channels and platforms, our content meets the needs of lifelong learners, no matter where and how they learn. As a global leader in lifelong learning, we're delivering interactive, results-driven education solutions to more than 50 million students in more than 150 countries. We combine cutting-edge research, editorial excellence, and technological innovation to make learning more dynamic, engaging, and effective—for life.

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